

WAR

ISSUE 4

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MONTHLY

FLYING FORTRESS: docile but deadly



Sicily—Allies' first step
into Occupied Europe
Japan's 'relic' siege of
Russian-held Port Arthur

CONVOY
HX112

WAR MONTHLY

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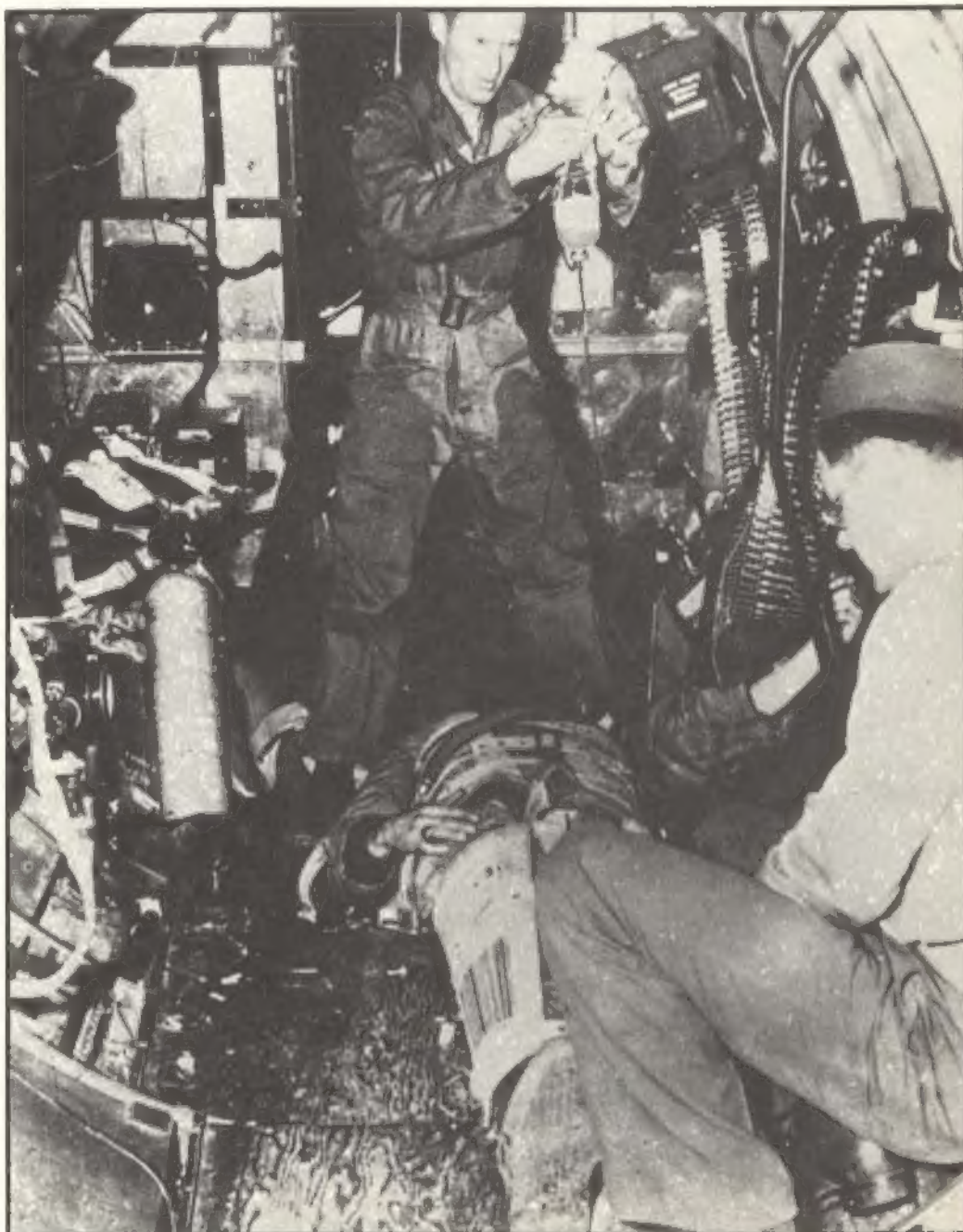
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Flying Fortress crews suffered heavy casualties in daylight bombing missions. Hit by flak during a raid on N.W. France, this waist-gunner lies beside his weapon. He is still wearing his flak-suit, and his oxygen mask lies on his chest. USAF medics administer blood plasma before moving him to hospital.

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FLYING FORTRESS

It climbed above German flak and fighters. From 30,000ft the Fort's bombs pin-pointed targets in Germany's war industry



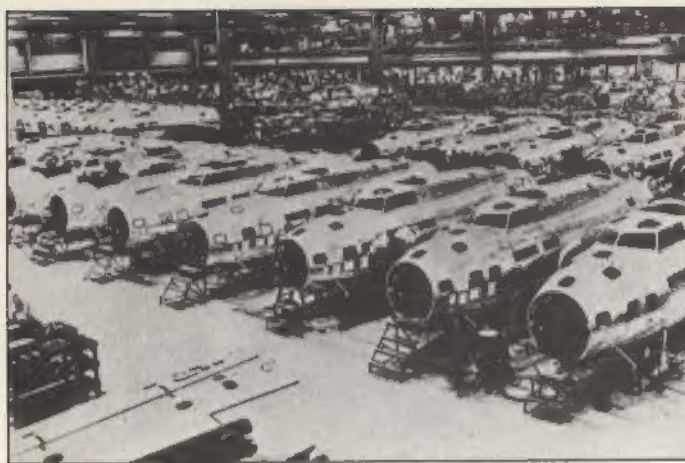
At 30,000ft B17s of 390th Bomber Group, 13th Wing, head towards their target. Above them, alert Mustang P51B escorts weave vapor-trail patterns in the deep blue sky. Vapor trails were caused through the condensation of hot exhaust gases.

'The more Fortresses we have, the shorter the war is going to be.' This was the confident prediction of Curtis E. LeMay, commander of the 305th Bombardment Group, based in England in 1943. He was referring to the American B17 Flying Fortress heavy bomber. Cruising high in the daylight skies of the Reich, the Flying Fortress brought the bombing power of the Allies home to the German people—something that the previous night raids of the British RAF had not achieved. From the modest beginnings in late 1942, when a few score bombers raided Germany, the bomber assault on the Reich had been transformed by February 1944, when a thousand bombers filled the skies over Berlin, a full 10 hours flying time from the English bases. Hitler had boasted of his European Fortress, *Festung Europa*. But the B17s proved the truth of Roosevelt's retort: 'Hitler forgot to put a roof over this fortress.'

The Flying Fortress was designed in 1934 as a private venture by the Boeing Company of Seattle. The prototype was far more advanced than any other bomber then flying.

Not only was the aircraft the first all-metal four-engine monoplane bomber, it was also considerably faster than the best US fighters. A limited order for 13 evaluation aircraft was made: their first use being to protect the US coastline from attack by an enemy fleet. However, air force commanders saw the Flying Fortress as an offensive weapon and around this bomber was evolved the doctrine of strategic bombing—the destruction of an enemy's factories and installations vital to his war economy. Some advocates went so far as to predict that a successful strategic bombing campaign could bring about an enemy's capitulation without the use of land armies.

The US plans involved daylight attack with bombers flying at very high altitudes—20,000ft or more—where they would be practically immune from fighter interception and above the accurate range of anti-aircraft guns. Targets would be pinpointed by the Norden precision bombsight (designed in 1932), so accurate that in the clear visibility of California or Texas an experienced bombardier could



Imperial War Museum

▲ B17s under construction at one of the Boeing Company's plants in Seattle, Washington.

▽ This B17B's bomb doors are open to receive its quota of 500lb HE bombs. Before being winched up into the aircraft, the bombs will be fused by ground-crew armorers. Standard bomb load was 6,000lb, and the B17B could operate a round trip of 1,300 miles with this weight. There was provision for an additional 8,000lb to be carried on under-wing shackles but the extra weight severely cut operational mileage and was not often used.



Imperial War Museum

repeatedly drop bombs within a 100ft diameter on a practice range four miles (21,000ft) below. Other technical developments, making this form of aerial bombardment a practical proposition, were turbo-superchargers for the Flying Fortress's radial engines, giving the aircraft a maximum 300mph at 25,000ft; and advances in oxygen breathing equipment enabling aircrews to survive for many hours at high altitude. But these technical advances had not been used 'in anger'.

In April 1941, prior to the US entering the war, 20 Flying Fortress B17Cs were delivered to the Royal Air Force. The RAF had been engaged in daylight bombing operations since 1939, but the slow, unescorted British bombers were easy prey to the German fighters, and for that reason small forces of fast, light aircraft were employed on daylight raids. The vulnerability of bombers at that period was underlined by the heavy losses inflicted on the *Luftwaffe* day-bombers during the Battle of Britain.

With the Fortresses came a team of US specialists, quietly posted into Britain to advise the RAF on 'technical problems'. British pilots were soon impressed by the Fortress's impressive ability to climb into the sky quickly—35,000ft could be reached in 45 minutes. But the normal service ceiling was fixed at 33,300ft, still far above that of any other RAF bomber and a height that would put it beyond the range of German interceptor fighters. To the RAF it seemed possible that the Fortress could be used to bomb targets from the stratosphere, but US bombing policy was based on accurate attack from heights of about 25,000ft.

Operational debut

The RAF's No. 90 Squadron was given the job of flying the new Fortresses and it commenced training at airfields in Norfolk, moving finally to Polebrook, in the East Midlands, to make its operational debut. This came on 8 July when three Fortresses led by Wing Commander MacDougall set out to attack the dockyards at Wilhelmshaven. Only one claimed a successful attack, the others experiencing mechanical difficulties due to the sub-zero temperatures met during the high-altitude flight. In fact, of 24 operations the RAF flew during the summer of 1941, over half were abortive due to extreme cold. Bomb rack and machine-gun mechanisms became frozen up and the turbo-supercharger accessories regularly had icing troubles. At 35,000ft the temperature could be minus 50°F, causing discomfort to aircrews. They suffered, too, from all the unpleasant decompression symptoms after a high-altitude mission.

The Fortresses were usually immune from AA fire, but enemy fighters made several interceptions. The first followed an attack on Brest when one Fortress was attacked by three Me 109s. In the course of a 20-minute running fight, two air gunners were killed and another badly wounded, while the damage sustained by the bomber was so heavy that it crashed on landing. The second battle took place when three Fortresses were sent to bomb German warships in Oslo harbor. One bomber returned across the North Sea with only two engines functioning normally, but it crashed while attempting to land in Scotland. These incidents give an indication of the extremely sound construction of the aircraft.

By September 1941 the RAF decided that lack of success did not warrant further Fortress operations. No. 90 Squadron was disbanded, but the Americans had gleaned valuable information which enabled them to improve later B17 models. In spite of the aircraft's name, the armament of

five .5in heavy machine-guns and one rifle-calibre weapon was found totally inadequate. All were hand held, so vibration, slip-stream pressure and low-temperature discomfort combined to make the gunners' task very difficult, and hits on an assailant highly unlikely. Furthermore, there was no tail gun-turret to protect the stern of the Fortress, which enemy fighters tended to attack.

Even before the RAF's abortive trials, the Boeing company had been working on an improved model, the B17E, which incorporated power-operated turrets and a tail-gun position. The whole rear fuselage had been redesigned with a completely new tail unit; and a large, distinctively shaped fin was fitted to counter the marked lack of directional stability of the original Fortress models at high altitude. The first of the new Fortresses was flown in September 1941 and the first service examples were reaching US squadrons when the Japanese blow fell on Pearl Harbor.

Of the 150 Fortresses that America began the war with, a third were with units in the Philippine Islands and Hawaii, and those few not destroyed on the ground during the early Japanese attacks were soon largely eliminated by the enemy's overwhelming forces. Nevertheless, the handful of Fortresses that survived to fight fared considerably better than those flown by the RAF the previous summer. Better bombing results were achieved because of the lower attack altitudes used, while in air combat the Fortresses were able to give a good account of themselves and survive against unfavorable odds. This was largely because most Japanese interceptors were equipped with rifle-calibre machine-guns—weapons which could not bring down these large bombers unless vital components were hit.

But vast distances had to be covered from the US bases in northern Australia and the New Hebrides, so it became apparent that the longer-ranged B24 Liberator (4,600 miles against the B17's 2,100) would be better suited to operations in this area. The B17 Fortress was gradually withdrawn from the Pacific war front to be used in Europe where its range was more than sufficient.

Birth of the 'Mighty 8th'

Soon after, on 1 July 1942, Flying Fortress 'Jarring Jenny' B17E, landed at Prestwick, Scotland, having flown the 3,000 miles from Maine via Greenland and Iceland. It was the first of hundreds of sister aircraft to be flown in in this way. The largest air striking force in history was established in Britain, in East Anglia. It was the birth of the mighty Eighth Air Force. The force began high-altitude daylight bombing operations in August 1942, and the first group of squadrons went to the original base at Polebrook and its satellite field at Grafton Underwood.

The B17F, standard model, supplied to the Eighth Air Force during late 1942, had 11 guns with two in each of the two power-operated turrets. Modifications made after arrival in Britain increased the Fortress's armament to 12 or 13 guns. The forward area was the least well defended and, because enemy fighters began to develop head-on attacks, the two or three additional guns were mounted in the nose of the aircraft.

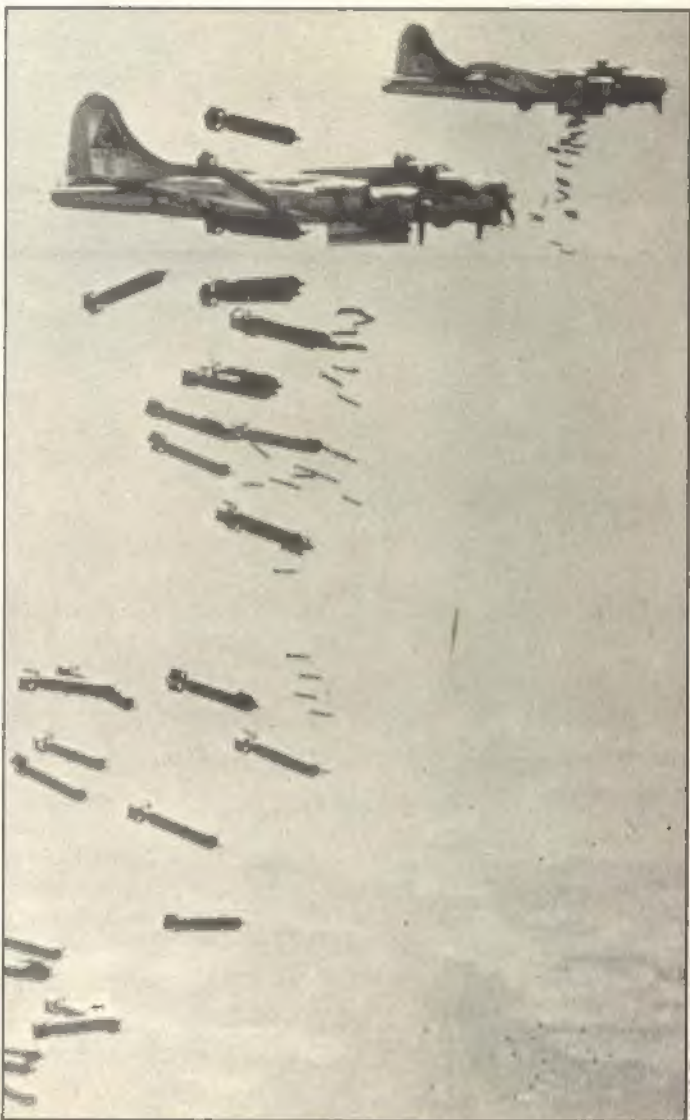
Early American raids achieved small success. Bombing accuracy left much to be desired, but most missions were completed without loss. In contrast to the RAF's sorties, the numerically superior American force flew in close formation—'boxes'—where the combined fire of the many defensive machine-guns proved a dangerous obstacle to *Luftwaffe* fighters attempting to attack.



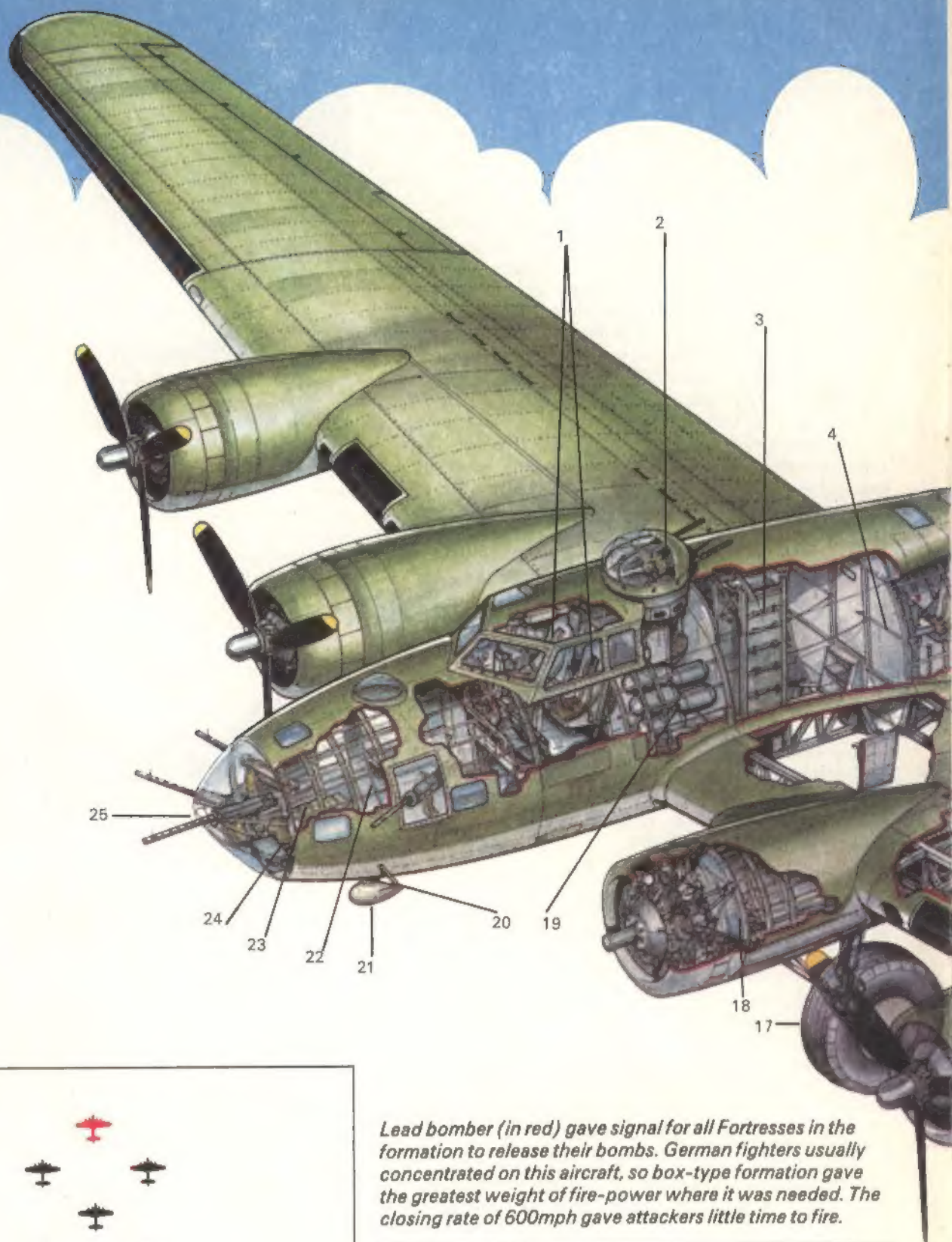
US Army

△ Brand new, gleaming Flying Fortress B17Gs, newly arrived in Britain from US factories. Staked out in a parking bay, the bombers await issue to combat units, where squadron markings and identification symbols will be added. In the first aircraft, the 'chin' turret, holding two .5 in machine-guns, can be seen. Through the perspex of the nose, the then secret Norden bomb sight is seen covered up.

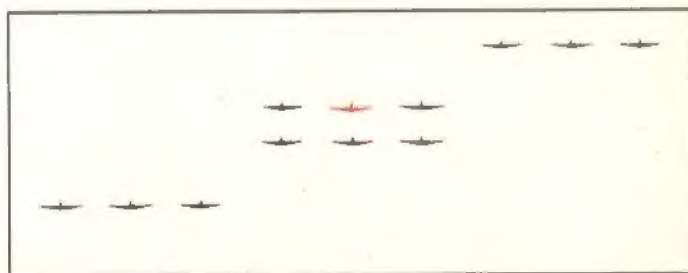
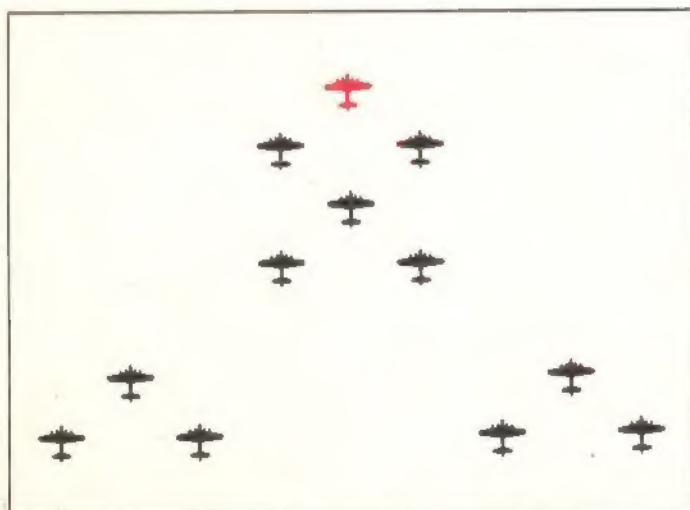
▽ Clusters of incendiary bombs fall from Fortress B17Gs during a high-level operation over Europe. Following planes would drop high-explosive bombs on the fires created.

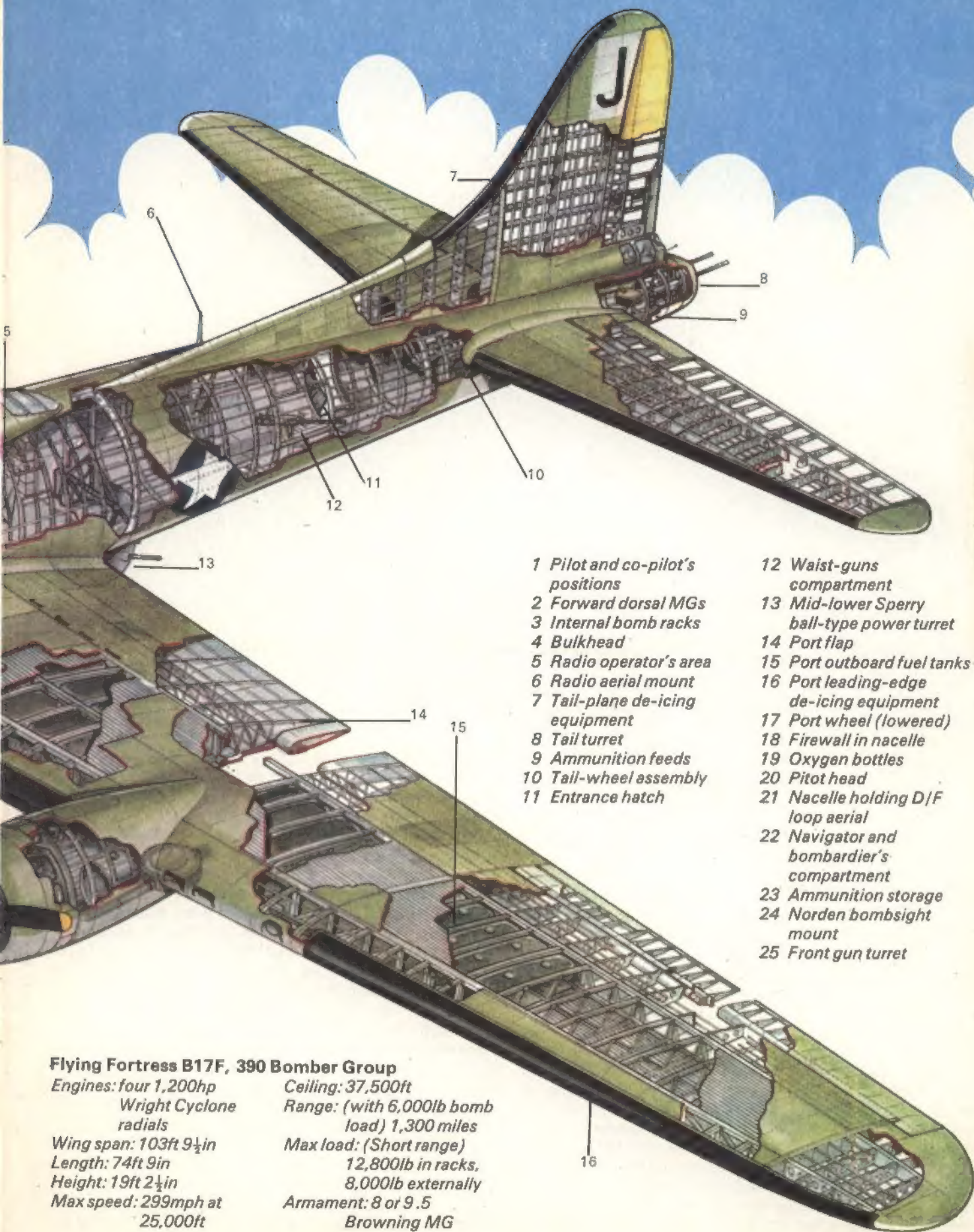


US Air Force



Lead bomber (in red) gave signal for all Fortresses in the formation to release their bombs. German fighters usually concentrated on this aircraft, so box-type formation gave the greatest weight of fire-power where it was needed. The closing rate of 600mph gave attackers little time to fire.





- | | |
|----------------------------------|--|
| 1 Pilot and co-pilot's positions | 12 Waist-guns compartment |
| 2 Forward dorsal MGs | 13 Mid-lower Sperry ball-type power turret |
| 3 Internal bomb racks | 14 Port flap |
| 4 Bulkhead | 15 Port outboard fuel tanks |
| 5 Radio operator's area | 16 Port leading-edge de-icing equipment |
| 6 Radio aerial mount | 17 Port wheel (lowered) |
| 7 Tail-plane de-icing equipment | 18 Firewall in nacelle |
| 8 Tail turret | 19 Oxygen bottles |
| 9 Ammunition feeds | 20 Pitot head |
| 10 Tail-wheel assembly | 21 Nacelle holding D/F loop aerial |
| 11 Entrance hatch | 22 Navigator and bombardier's compartment |
| | 23 Ammunition storage |
| | 24 Norden bombsight mount |
| | 25 Front gun turret |

Flying Fortress B17F, 390 Bomber Group

*Engines: four 1,200hp
Wright Cyclone
radials*

Wing span: 103ft 9½in

Length: 74ft 9in

Height: 19ft 2½in

*Max speed: 299mph at
25,000ft*

Ceiling: 37,500ft

*Range: (with 6,000lb bomb
load) 1,300 miles*

Max load: (Short range)

12,800lb in racks,

8,000lb externally

Armament: 8 or 9.5

Browning MG



U.S. Air Force

The technique of high-altitude daylight precision bombing was pioneered during the next six months by the B17s. The problems were many, a major handicap being the weather. Clear visibility was needed to make a precision bombing attack, but often after a three or four-hour flight over enemy territory the target was found to be obscured by cloud. In order to effectively saturate the small targets attacked, various formations were tried and eventually all aircraft dropped their bombs on the signal of the lead bomber; its bomb-aimer pin-pointed the target for everyone.

Some very successful strikes were made on targets along the seaboard of Occupied Europe. But on 27 January 1943 the Fortresses struck at Germany herself—with a raid on Wilhelmshaven. This new threat from the daylight sky—one which the Germans did not think could succeed—soon met with stiff opposition. Even so, the air gunners on the Fortresses usually shot down several of the attacking Messerschmitts and Focke-Wulfs, although their claims of aircraft destroyed were frequently exaggerated. In one notorious case, October 1942, trigger-happy gunners claimed 102 'kills' when precisely two German fighters were lost. This can be partly explained by the practice of awarding air gunners an air medal for their first victim.

A typical mission during this first year would entail a six to eight-hour flight to a target often 300 to 400 miles from

base. As take-off would usually be soon after dawn, the 10-man crews were roused from their beds at least three hours beforehand for breakfast and briefing. Flying kit consisted of electrically heated suits and heavy fleece-lined clothing to prevent frostbite. A Fortress would take off from the runway every 30 seconds and the next two hours would be spent making wide orbits over the English countryside, at the same time gaining altitude and assembling into close formation. Once the formations were assembled into narrow bomber 'streams' they would head towards the enemy coast, climbing above 18,000ft in order to evade flak.

Few deep penetrations into Germany evaded fighter resistance and sometimes attacks would commence at the enemy coast and continue till the B17s recrossed it on the return flight. Large stocks of ammunition were carried and it was not unusual for the gunners on a single B17 to expend 6,000 rounds during a mission. On approach to the target individual formations would position themselves for the bomb run. While the Fortress could theoretically lift bomb loads of up to 17,600lb, its bomb-bay could only accommodate 4,000lb. Other bombs could be carried outside the bomb-bay, but the streamlining was so badly affected that the aircraft's range was reduced disastrously. The largest bomb carried was 2,000lb of high-explosive. Two of these, or four 1,000-pounders, formed the usual load carried by

each bomber for an attack on an industrial target. After many hours on oxygen and exposed to the noise and cold, crews were always very fatigued. This type of flying was extremely demanding on human stamina—apart from the strain of combat.

Air battles of epic proportions occurred as the 8th USAF strove for daylight air supremacy, by aiming at such vital objectives as aircraft factories, oil refineries, submarine works, chemical plants and the ball-bearing industry. It was to the latter's heart at Schweinfurt, 400 miles from the Channel coast, that two of the most costly missions were run on 17 August and 14 October 1943. The first mission, combined with an attack on the Messerschmitt fighter plants at Regensburg and Wiener Neustadt, cost 60 out of 376 Fortresses and the same number also failed to return from the second raid of 291 B17s to Schweinfurt alone. Of those that did return another 17 were written off in crashed landings and 121 needed repairs, leaving just 93 aircraft undamaged. Worse still was the casualty list of 648 killed, wounded, and missing. Such crippling casualties, running at over 16 per cent of the force despatched, could not be sustained because of the loss of trained aircrews. It was obvious that long-range fighters would have to be employed if the US strategic bombing campaign was to continue.

From November 1943 onwards fighter support was available to 520 miles out; and the advent of the P51 Mustang eventually allowed US fighters to escort the

◁ Tired but happy to be home safely. This B17G crew, led by Lt. John C. Stultz, 24, have brought their Fortress back to England from a raid on Frankfurt, Germany. Holdalls take chutes and portable gear. Crewman to Stultz's left carries a flak-suit over his shoulder. Plane is already being fuelled for its next mission as a bowser tops tanks with 100 octane.

▽ A stick of 500lb HE bombs falling onto the harbor area of Naples during a raid by 100 Flying Fortresses. At least ten ships were hit, including two passenger liners. A group of bomb bursts can be seen in the sea by the harbor wall.



US Air Force

heavy bombers all the way to the target. With this protection, the Fortresses—and the B24 Liberators, forming a third of the strike force from early 1944—flew with less harassment from enemy fighters. An early radar system (H2S) gave them the ability to strike from above cloud-base. But increasingly powerful German AA weapons took a heavy toll of the American bombers during the last year of the war. At some targets, notably the vital synthetic oil plants at Ploesti, as many as 500 heavy guns were deployed to hurl fearful barrages at the close formations. Again the Fortress's remarkable ability to sustain severe damage and still fly on enabled many aircraft to return to friendly territory. On Schweinfurt raids some crippled B17s landed in Switzerland and Sweden.

By May 1945 the USAF had 108 Fortress squadrons in the UK and 24 in Italy (over 1,200 aircraft), while the RAF had eight in Coastal Command for meteorological and anti-submarine work and two special radio counter-measures units in Bomber Command to support its night bombers. Even the Germans had thought highly of the aircraft and used several captured examples for clandestine operations, chiefly to convey agents behind the Allied lines.

Crews' close-knit spirit

The crews of B17s had the same close-knit spirit as a veteran infantry squad. Each aircraft's 10 men had his specialization, there being a pilot, co-pilot, navigator, flight engineer, wireless operator, bomb-aimer, belly gunner (in the aptly-named 'morgue'—the cramped belly turret), two waist gunners, and a tail gunner—the loneliest man of all. And some air crew completed as many as 120 missions. There were numerous instances of crewmen giving up their parachutes to wounded comrades. Pilots showed extraordinary devotion, doing their utmost to nurse crippled 'Forts' home after all other crewmen had jumped. Another facet of the high morale was an addiction to 'nose art'—painting aircraft nicknames and emblems, including a high proportion of naked and semi-naked females.

Pilots found it an easy aircraft to fly, docile, positive in control and extremely stable. It was this stability that made the Fortress such a good 'bombing platform', essential for accurate use of the precision bomb-sight at 25,000ft. The basic soundness of the aircraft's aerodynamics explains how Fortresses could and did return over many hundreds of miles with incredible battle damage. Large parts of wings, fuselage and tail could be shot away—there were occasions when complete tail stabilizers were severed—but still the aircraft would make safe landings. One or two engines were often put out of action and it was not unknown for a Fortress to get home with only one of the four functioning. In April 1944 Fortress 'Bertie Lee' came back from a 1,200-mile flight with burning incendiaries in a jammed bomb-bay as well as a shattered cockpit area with no working flaps or undercarriage.

Almost 5,000 Fortresses out of 13,000 built were lost through accident or combat. The greater proportion of these went down during the great air battles over north-west Europe in 1943 and 1944. It was these actions—without parallel in their scope and intensity—that brought the B17 its fame. Not once during the period when the Fortress formations battled alone through the stratosphere to reach their objectives was a mission turned back by enemy action.

Roger A. Freeman

IGNORED LESSONS

America's Civil War exposed trench warfare's futility. But 1914's generals made the same errors. And millions died



By kind permission of the Commonwealth War Graves Commission

Tyne Cot Cemetery, Passchendaele, holds 11,956 Allied war dead. They died in 1917 because of ignored American Civil War lessons. This photograph shows the cemetery in its initial 1918 stage, before a memorial for 34,856 commemorations was erected. Since then the Commonwealth War Graves Commission has carefully tended the graves of two world wars.

The American Civil War was in many ways the tactical bridge which spanned the gulf separating the battle drills of the Napoleonic period from those of the horse and rifle era, which lasted until tanks were used effectively in battle. But the gulf should have been wider with a second arch to the bridge, for, as the Battle of Cold Harbor in 1864 shows, the tactical lessons of the war still had not been learned by many commanders of the Federal Forces that eventually won; and because of the absence of that second arch, thousands of men died on the Somme in France, in 1916.

At the beginning of June 1864, after the bloody struggles of the Wilderness and Spotsylvania, the Federal Army of the Potomac and the Confederate Army of Northern Virginia faced each other in the neighborhood of the little hamlet of Cold Harbor, some 10 miles from Richmond. The Army of Northern Virginia was under the immediate command of General Robert E. Lee, while the Army of the Potomac, though commanded by General George G. Meade, was under the supreme command of General Ulysses S. Grant. It was Grant's intention to break through Lee's much weaker

army and capture Richmond, capital of the Confederacy.

Since its arrival in the Cold Harbor area, the Army of Northern Virginia, in accordance with its customary practice, had been hard at work entrenching its position. Lee, as usual, had chosen a line which was naturally strong—apart from the trenches which his soldiers were busily digging, it was covered in front by thickets and many of the lines of approach were intersected by marshes.

The Federal assault on Lee's lines was to be a general attack along the whole six miles of the enemy's position. It was launched on 3 June. Swinton, the 'New York Times' correspondent with the Army of the Potomac, wrote that 'it was certainly not later than 45 minutes past four, when the whole line was in motion, and the dark hollows between the armies were lit up with the fires of death. It took hardly more than 10 minutes of the figment men call time to decide the battle. There was along the whole line a rush—the spectacle of impregnable works—a bloody loss—then a sullen falling back, and the action was decided.'

General Armistead L. Long, Chief of Artillery in the

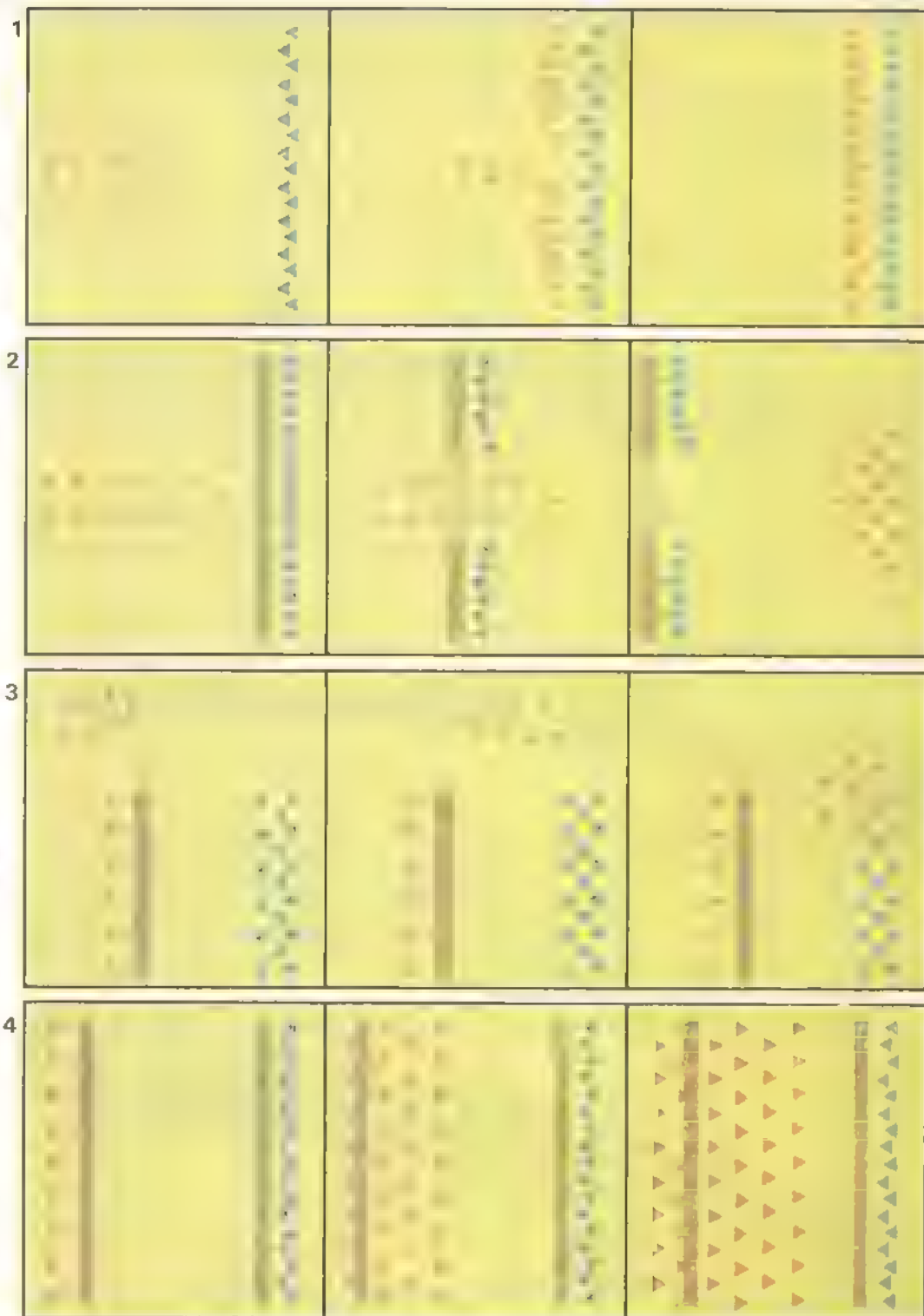
The evolution of infantry tactics from 1815 to 1914.

1 *The classic Napoleonic attack. Preceded by a cloud of skirmishers (two small symbols) the column marches up to the enemy line. When artillery and skirmishers have shaken the enemy, the column deploys into line just outside effective musket range (50 yards) and goes in for the decisive exchange of fire.*

2 *The storming column, long used in sieges, now revised to counter the increased range of the rifle, whose user frequently protects himself with field works. The column rushes the line on a narrow front without deploying, thus reducing time under fire. Once the enemy's position is taken, the attacking units should reform behind it and widen the breach made. This form of attack was twice used by the Union army at the Battle of Spotsylvania (1864). But as in 1914-18, reserves could not be got up faster than the enemy's, so the first impetus was lost.*

3 *The pivot maneuver used by Gen. Robert E. Lee at the Battle of Chancellorsville. A weak but strongly dug-in holding force 'amuses' the enemy while the bulk of the army attacks the flank.*

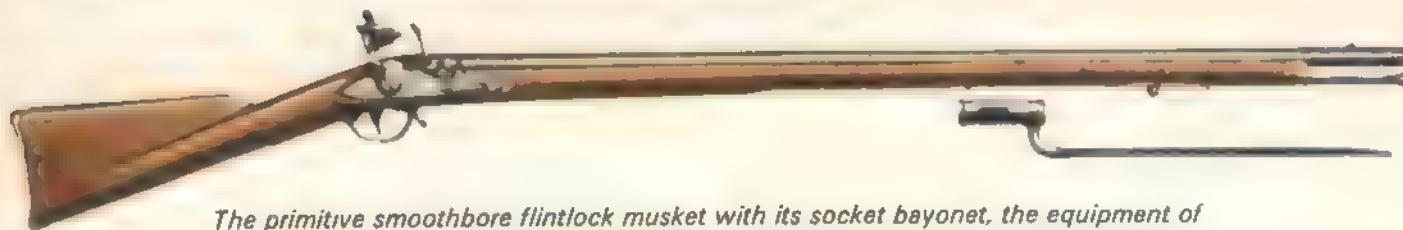
4 *World War I—waves of infantry are slaughtered trying to take the whole length of enemy trenches. A tactical impasse has been reached in which only 3:1 odds might prevail until a new weapon (the tank) can overcome the rifle.*



Confederate II Corps at Cold Harbor, wrote 'Along the whole Federal line a simultaneous assault was made on the Confederate works, and at every point with the same disastrous results. Rank after rank was swept away until the column of the assault was almost annihilated. Attack after attack was made, and men fell in myriads before the murderous fire of the Confederate line . . . In the brief space of one hour the bloody battle of 3 June was over, and 13,000 dead and wounded Federals lay in front of the lines behind which little more than 1,000 of the Confederate forces had fallen.' The Battle of Cold Harbor provided one more example of the deadly effect of rifle fire from steady

infantry in an entrenched position.

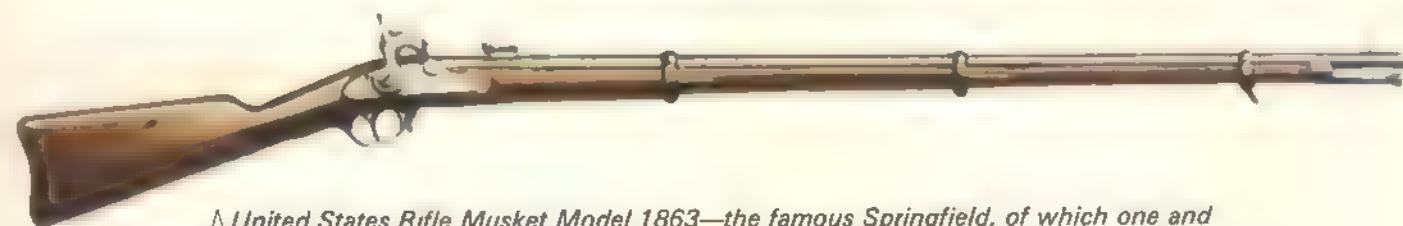
On 1 July 1916, nearly 50 years later, the bombardment which heralded the Battle of the Somme reached its peak at 0700. On the front of the British Fourth Army it had been decided that the assault troops were to be launched together in closely packed waves, without waiting to discover whether the bombardment had really paralysed the resistance. So at 0730, long lines of infantry clambered out of their trenches and advanced at the steady pace prescribed by Army instructions, towards the enemy defenses. The battalions were moving forward in successive waves, about 100 yards apart, the men almost shoulder to shoulder and in



The primitive smoothbore flintlock musket with its socket bayonet, the equipment of virtually all infantrymen between 1700 and 1850. Slow to load, prone to misfire, it was notoriously inaccurate. Two shots a minute was a good rate of fire.



Deceptively similar is the 1855 British Enfield rifle musket, exported into the American Civil War. Firing a Minie conical bullet of .577 calibre to four times the smoothbore's effective range, it spelt the end of Napoleonic massed ranks.



△ United States Rifle Musket Model 1863—the famous Springfield, of which one and a half million equipped both North and South. The last American muzzle-loader, it could fire six shots a minute at ranges of up to 1,000 yards.

▽ Sustained firepower against flesh and blood—the Lewis .303 Light Machine Gun, Drum-fed and air-cooled, it was an American invention (1911) mainly used by the British Army. Range: 2,000 yards with auxiliary sights. Rate of fire: 500-600 rpm.

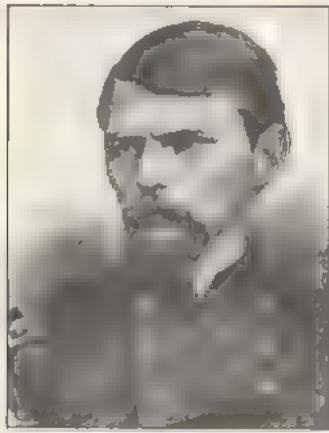


Sutton/Bryan

straight lines, carrying their rifles topped by gleaming bayonets at the high port; 'for,' says Sir Basil Liddell Hart in his 'History of the First World War', '1916 marked the nadir of infantry tactics, the revival of formations that were akin to the eighteenth century in their formalism and lack of maneuvering power.' The barrage lifted beyond the enemy front line trenches, and out came the defending Germans with rifles and machine-guns to pour a hail of fire into the attacking troops. 'By nightfall,' adds Liddell Hart, 'many battalions were barely a hundred strong.'

Certainly, in the British Army, much study was devoted to the American Civil War both before and after World War I,

thanks largely to Colonel G. F. R. Henderson's classic work, 'Stonewall Jackson'. That brilliant commander's campaign in the Shenandoah Valley was a standard study for promotion and Staff College examinations; but the primary appeal of this campaign lay in the offensive handling of a small mobile force against a generally numerically superior enemy. This was the type of situation in which a British Army had had so often to operate, and a situation that might well occur again. Thus the lessons that were learned were those of maneuver, surprise, timing, mobility, reconnaissance, protection, exploitation, and the handling of all arms in attack and defense.



Mary Evans Picture Library

1 Col. Emory Upton—the brilliant 24-year-old tactician who planned and led the Federal heavy column assault into the 'Bloody Angle' at Spotsylvania (10 May 1864). 2 Gen. Ulysses S. Grant whose 1864 strategy of attrition foreshadowed that of Britain's Earl Haig in World War I, 'I am going to fight it out on this line if it takes all summer.' Ulysses Grant grimly resolved to grind down the South by continuous fighting in which he knew the North's superior reserves of manpower would last the longest. 3 A Union sniper aims his Sharps breech-loading carbine. It is fitted with an early telescopic sight.

But perhaps because a large proportion of the infantry were still equipped with smoothbore muskets, the change that more modern weapons imposed on tactics was largely missed. British armed forces fought campaigns in many parts of the world in the years between the end of the American Civil War and the end of the nineteenth century but they did not come up against a sophisticated modern army or modern firepower. These wars were small scale colonial affairs and it was not until 'Black Week' of 1899 in the Boer War that British forces were subjected to concentrated rifle fire.

The succession of defeats in 'Black Week' meant that the British Army after the Boer War had a greater appreciation of the power of the rifle than the French or Germans, and were more skilled in its use but, as Liddell Hart wrote: "The Evidence taken before the Royal Commission on the War in South Africa" offers astonishing proof of how professional vision may miss the wood for the trees. There is little hint, among those who were to be the leaders in the next war, that they recognized the root problem of the future—the dominating power of fire defense and the supreme difficulty of crossing the bullet swept zone."

At the start of the American Civil War an infantry regiment (which consisted of one battalion) had 10 companies, of which two were designated flank companies and were supposed to be trained as light infantry and armed with rifles. Their primary function was to form a line of skirmishers to cover the front of the main body of the advancing battalion until close contact was reached, when they fell back to each flank. This organization was a legacy from the infantry columns and skirmishers of the Armies of the First French Republic and from the flank companies of grenadiers and light infantry which were originated in the eighteenth century.

The standard American attack formation was still the column preceded by skirmishers. A regimental column, for instance, might have each of its eight battalion companies in line, one behind the other, with the two flank companies deployed in extended, or skirmishing, order in front. In a brigade column all the flank companies, or alternatively one whole regiment, might constitute a skirmishing line, followed by the remainder of the brigade in close column of regiments, each in a line of two ranks. A division might advance with two brigades side by side, each in column,

with the third brigade massed in reserve. There were many alternative dispositions, but the usual tactical deployment was of a line of skirmishers followed by heavy masses of men advancing shoulder to shoulder.

Tactical formations are, or should be, based on the effect of weapons. These standard attack formations were based on the use of the smoothbore musket. The maximum effective range of this weapon was 50 yards—the range and accuracy had not improved since the introduction of the British 'Brown Bess' in the early part of the eighteenth century.

The US army began the changeover to rifles in the early 1850s with the adoption of the Minie rifle—a changeover that increased the range of the average soldier to 200 yards and vastly improved the accuracy of close range fire. But by the outbreak of war in 1861 the replacement of muskets by rifles was by no means complete though from 1855 on all new muskets were rifled.

From 1861, production of the new US Springfield rifle started. But, because of the rapid expansion of the armies, most units on both sides at the start of the war were armed with smoothbore muskets, and many regiments had flintlocks, mostly the US Model 1822—there were large stocks of these in the arsenals because their manufacture had only stopped in the early 1840s. In the Confederate Army most infantry regiments in the early days of the war were issued with flintlock muskets converted to percussion lock.

Both sides armed their soldiers with rifles as quickly as possible. Agents from both the Confederacy and the Union travelled to England and purchased large quantities of the excellent British Enfield rifles, and copies were manufactured in Confederate armories. All these rifles were single-shot muzzle-loaders.

In time, most cavalry units were armed with breech-loading rifled carbines (the most popular being the Sharps) because muzzle-loaders were difficult to handle on horseback. The Confederate cavalry in the western theater of war, however, preferred the long Enfield rifle, because they normally fought as mounted infantry and the short-barrelled carbine was a far less accurate weapon. Before the end of the war the Federal cavalry were armed throughout with the Spencer magazine carbine, and a few infantry regiments received Spencer magazine rifles.

The Seventh Connecticut Regiment got these seven-shot



The power of the defense—Cobb's Georgians and Kershaw's South Carolinians firing from behind the stonewall on Marye's Heights, reload in cover and comfort. They repulsed 14 Union attacks by five times their number at Fredericksburg (1862).

Mary Evans Picture Library

weapons in December 1863, and an enthusiastic soldier in the regiment wrote to his family: 'The Rebs made three charges on us but we stood up to the rack with our seven shooters . . . and piled the Rebs in heaps in front of us . . . The Rebs hate our guns, they call them the Yanks' 7 Devils: they say the Yankees stand up there with their G.D. coffy mills, wind them up in the morning, run all day shoot a thousand times . . . they are a good rifle.'

Despite the testimony of previous scenes of this sort no general on either side, up to the end of 1862, had yet realized the tremendously greater power which the rifle conferred on the defense. Indeed, in 1861, after the first Battle of Bull Run, 'Stonewall' Jackson was discussing fire power in terms of the smoothbore musket—though he placed comparatively little value on this. He said that 'I rather think that fire by file is best on the whole, for it gives the enemy an idea that the fire is heavier than if it was by company or battalion. Sometimes, however, one may be best, sometimes the other, according to circumstances. But my opinion is that the best mode of fighting is to reserve your fire till the enemy get—or you get them—at close quarters. Then deliver one deadly deliberate fire—and charge.' This meant that firing was carried out from open positions, that close quarter fighting was the objective and that one volley, rather than rapid fire, was the tactic to adopt.

All these concepts were, of course, unsuited to the effective use of rifle power. Even when rifles had been received, according to General E. P. Alexander, the old idea was held that because the percentage of hits is always small, the fire of the infantry should not be rapid in case the men waste too much ammunition. A recognition of the value

of rapid fire came only gradually, through common sense and experience.

Another far-reaching lesson of the American Civil War—had it been taken—was that of the importance of field entrenchment, the logical consequence of the preponderance of concentrated bullet and shell attack. General Alexander's description of the lines in the Yorktown peninsula in the spring of 1862 could have been written of World War I. He says: 'At many points the crowded ranks in the trenches had to either sit or crouch behind the parapet, in water up to the knees, from daylight until darkness permitted one to rise upright or to step outside the trench.'

But it was perhaps Lee who first realized the importance of field fortifications as a pivot of maneuver in mobile operations. On 2 June 1862 he took over command of the army which on the previous day, under the command of General Joseph E. Johnston, had failed in its attack on General George B. McClellan's Federal forces which were advancing on Richmond. Most of the senior officers considered that the position of the Confederate Army was now untenable and favored a withdrawal.

Lee saw that any withdrawal would entail the evacuation of Richmond; but in any case he intended to attack, not retreat. To prevent an attack by McClellan from disrupting his preparations, however, and to provide a springboard for his own offensive, he decided that it would be necessary to fortify. He accordingly issued orders to dig and fortify, directing each divisional commander to be responsible for his own section of the front.

It did not take the Confederate infantry long to appreciate the value of entrenching. Colonel Lyman of the Federal



Imperial War Museum

The futility of attack—heavily laden British infantry go over the top in support of the first wave during the later stages of the 1916 Somme offensive. The dried, battle-torn ground is ripe for the quagmire soon to be formed by autumn rains.

Army writes of them that 'when the rebels halt, the first day gives them a good rifle-pit; the second a regular infantry parapet with artillery in position; and the third a parapet with an abattis in front and entrenched batteries behind. Sometimes they put this three days work into the first 24 hours.'

It was probably at the Battle of Fredericksburg on 13 December 1862 that the new power of the defense was first revealed to all the commanders in the Virginia theater of war. General Ambrose E. Burnside, new commander of the Federal Army of the Potomac, had advanced towards Fredericksburg on the Rappahannock River, with Richmond as his eventual objective; while Lee had moved to intercept this threat. Burnside concentrated his army, about 120,000 strong, on the left bank of the Rappahannock, intending to force the passage of the river, seize Fredericksburg on the opposite bank, and drive on to Richmond.

Lee drew up his army of only about 78,000 men along the heights which ran parallel to and from one to two miles distant from the river, with a small body thrown forward into Fredericksburg. Lee issued directions to Col. A. L. Long to prepare the artillery plan, and Long says that this was the first time that the Confederate artillery was systematically massed for battle. He placed 200 pieces of artillery in position, and so arranged that at least 50 pieces could be brought to bear on any threatened point; while on Fredericksburg itself and on Deep Run a mile to the south of it, the anticipated starting points for the attack, 100 guns could be brought to bear.

The battle opened with a massive bombardment of Fredericksburg for an hour by the entire Federal artillery to

dislodge the Confederate sharpshooters, who were stopping the construction of the bridges. This destroyed much of the town but did no harm to the sharpshooters. Eventually Federal troops succeeded in crossing the river and the Confederates were withdrawn to the main position.

The Federal main attack, when it was eventually launched, encountered a devastating concentration of Confederate artillery fire. The further progress of the attack is described in a contemporary account as follows: 'Still the enemy notwithstanding the havoc caused by our batteries pressed on with great determination. His ranks were frequently broken; but at last his lines had staggered within one hundred yards of the foot of the hill. At this time our infantry suddenly rose and poured such rapid volleys into them that the advance was impeded by their own dead. As the columns halted and staggered and swayed or broke, our men from breastworks and rifle pits, and from every imaginable place, were pouring into their bleeding masses showers of small shot. It was too much for human endurance . . . In vain Sumner pushed forward French, Hancock, and Howard; each division was repulsed with terrible loss; the Irish brigade advanced impetuously and almost perished within a short distance of the Confederate guns . . .'

Swinton, observing from the Federal side, writes: 'General Burnside continued in sheer desperation to throw in division after division to foredoomed destruction. But while this may explain it will not justify General Burnside's conduct. It would have been well for him had the failure of the first assaults, and the disclosures they made of the strength and position of the enemy given him pause in their repetition.' This account and this criticism could have been applied as



it stands to all too many attacks, and to all too many commanders of World War I. Fredericksburg did not stand alone; for the lesson was repeated, not only at Spotsylvania and Cold Harbor in 1864, but also at the Japanese assault at Port Arthur in 1904 and at the Bulgarian failure against the Chatalja lines in 1912. Indeed the whole of the Russo-Japanese War of 1904 was studied by both German and French Armies but both, according to Major General J. F. C. Fuller, missed its main lesson—that of 'the preponderance of the projectile, bullet and shell, *in the defensive*, and its logical consequence—field entrenchment'.

Power of the rifle

The change in tactical formations, which resulted from the revelation of the power of the rifle, was gradual; and it varied in different armies according to their commanders' appreciation of the new conditions of warfare. The Army of the Potomac, to its cost, still retained a too rigid battle drill; whereas in the Army of Northern Virginia and in Sherman's Military Division of the Mississippi far more flexible tactics were adopted to make use of the ground and to cover movement by fire. The skirmish line was often so strengthened that in practice it became the first wave of the attack, while the troops in close order behind were used as supports to strengthen the attack and to exploit success.

'Modern formations,' says Colonel Henderson, 'to a very large extent, had their origin on American battlefields. The men realized very quickly the advantage of shelter; the advance by rushes from one cover to another, and the gradual working up, by this method, of the firing line to effective range—the method which all experience shows to be the true one—became the general rule.' In all the Confederate armies it became the general practice to attack in small columns, which advanced in short rushes in successive waves and behind clouds of skirmishers. Of his infantry Sherman wrote: 'Very few of the battles in which I have

participated were fought as described in European textbooks, viz., in great masses, in perfect order, maneuvering by corps, divisions and brigades. We were generally in wooded country, and, though our lines were deployed according to tactics, the men generally fought in strong skirmish-lines, taking advantage of the shape of the ground, and of every cover. We were generally the assailants, and in wooded and broken country the "defensive" had a position advantage over us, for they were always ready, had cover, and always knew the ground to their immediate front; whereas we, their assailants, had to grope our way over unknown ground, and generally found a cleared field or prepared entanglements that held us for a time under a close and withering fire.'

After the war, Sherman visited military establishments in Europe, including Aldershot, and must have discussed his campaigns with a number of officers. It is all the more curious that the attack in mass formation was still taught in many European armies up till the start of World War I. John Terraine, writing of the Battle of Mons in 1914, quotes a British sergeant as saying of the German attack, 'They were in solid blocks, standing out sharply against the skyline, and you couldn't help hitting them'; while, according to a Gordon Highlander, 'They advanced in companies of quite 150 men in five files deep, and our rifle has a flat trajectory up to 600 yards. Guess the result'. At the first Battle of Ypres, in 1914, four regiments of the Prussian Guard, each of three battalions, attacked in line, their battalions massed in column. Their consequent losses from the British rifle and artillery fire were very heavy.

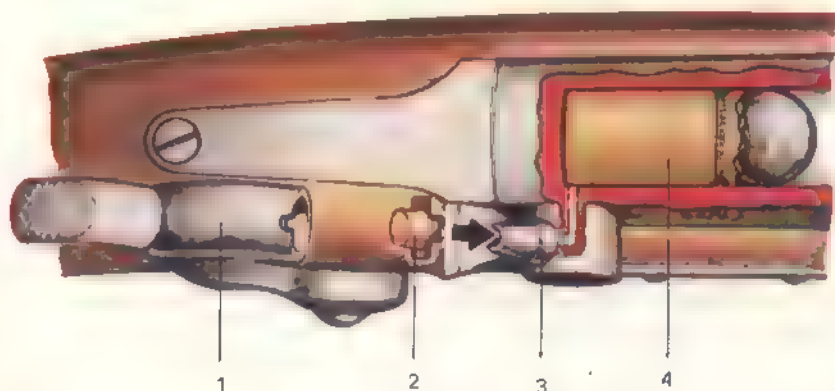
The Battle of Fredericksburg was followed a few months later by Lee's brilliant victory over the Federal General Joseph Hooker at the Battle of Chancellorsville, in the same general area. Hooker tried to outflank Lee's position in front of Fredericksburg by moving the major part of his army upstream and then across the Rivers Rappahannock and

◁ German heavy machine-gun post in 1914—this weapon is a 1908 Maxim. Germany was first to glimpse the potential of the MG.

▷ This 1807 invention was to transform infantry tactics, replacing a crude flintlock sparking into a powder pan by a copper cap, thus making the musket of 1840 an all-weather gun and tripling its rate of fire.

(1) Cocked hammer strikes percussion cap (2) whose fulminate of mercury charge sets off the detonator that sparks down the vent (3) to ignite the powder cartridge (4) firing the musket ball.

The Percussion Principle



Rapidan to the farmstead and road junction of Chancellorsville. Leaving a portion of his force to contain that part of the Federal Army that was still in the Fredericksburg area, Lee marched rapidly with the remainder to face Hooker.

The position of the Army of the Potomac about Chancellorsville was very strong. Lee divided his army again, sending Jackson with the larger part on a long flank march to turn the Federal right, while he demonstrated frontally against Hooker with the remainder. Lee, in short, had split his army twice, and used the strength of the defense to employ in succession two comparatively weak detachments to act as pivots of maneuver in order to mount an attack on the flank of a very much stronger enemy in a fortified position. He obtained his victory by the use of mobility, economy of force, and surprise, combined with a clear appreciation of the mentality of the opposing commander.

Genius measured

The lesson that Lee taught at Chancellorsville was that for success against strongly held field fortifications it is necessary to throw the enemy off his balance. All too few commanders have asked themselves the question which Lee stated aloud as he bent over his maps: 'Now, how can I get at these people?' The measure of his genius is apparent when one looks at the strength of the opposing armies; for Lee, with a total strength of 56,000 against Hooker's 134,000, managed to have a superiority of strength at the decisive point.

Two months later, due to failures by the staff and by subordinate commanders, Lee was defeated at Gettysburg. He retreated into Virginia, followed closely by Gen. Meade with the Army of the Potomac, and after a series of maneuvers, he took up a position behind the Rapidan at the beginning of November 1863. Here Meade hoped to surprise him in his very extended winter quarters. On 26 November, cutting loose from his base of supplies and issuing his troops with 10 days' rations, Meade began his advance. Lee, having discovered the Federal move, concentrated his army and drew it up behind a stream called the Mine Run, which flowed north to join the Rapidan and lay across the roads of Meade's advance.

The Confederate line followed a series of heights and was from six to eight miles in extent. Long says: 'The rugged banks of Mine Run were densely clothed with timber, which the troops as they reached the ground hastily attacked with

axes, and dragged the heavy logs to the points to be defended. The breastworks rose as if by magic. Lee rode along the banks of the stream, and with his great engineering skill selected the points to be defended and gave the necessary orders. In a remarkably short space of time an extended line of works was erected, comprised of double walls of logs filled with earth and with a strong abatis in front. The position had suddenly become formidable.'

The Army of the Potomac reached this line on the morning of 28 November. Meade sent out reconnaissance parties to try to find a point of attack and despatched General Gouverneur K. Warren with 2nd Corps to locate the enemy's right and, if possible, outflank him. Warren, having moved southwards, reported that he had found a place suitable for attack, while General John Sedgwick, commanding 6th Corps on the right of the Federal line, sent word to Meade that the left of the Confederate line appeared assailable. Meade accordingly ordered an attack by both wings on the following morning. Sedgwick's guns opened at the time laid down, but there was not a sound from Warren. Lee had observed Warren's movement and, during the night, had so strengthened his right flank that when morning dawned Warren saw that the task was hopeless. His troops shared his belief; for, says Swinton, 'the soldiers, without sign of shrinking from the sacrifice, were seen quietly pinning on the breast of their blouses of blue, slips of paper on which each had written his name.' Meade rode over to see Warren accepted his opinion and withdrew his forces the following night.

There is a lesson here that an assault which will inevitably entail heavy casualties should not be undertaken unless there is a very good chance of success, and also that the opinion of a subordinate commander who will have to carry out an attack should not be overruled lightly. In September 1915 the Loos offensive was undertaken against the advice of Sir Douglas Haig, who, as Commander First Army, was to carry it out. Sir William Robertson, Chief of the General Staff of the British Expeditionary Force, endorsed this opinion. Also against it was Sir Henry Rawlinson, whose Corps of the First Army would have the principal role. He wrote in his diary: 'My new front is as flat as my hand . . . It will cost us dearly, and we shall not get very far.' Under pressure from Marshal Joseph J. C. Joffre, French Commander in Chief, the attack was carried out—and failed.



Robert Hunt Library

△ Sniper 1917 style—the rifle is a 1898 Mauser breech-loader with telescopic sight. The man's task is the same as that of the previous US sharpshooter (page 11), but only bitter experience taught Europeans this trench-warfare technique.
 ▽ Dead festoon the wire—again, World War I's ignorance. Yet barbed-wire first saw military use on 16 May 1864 at Drewry's Bluff; the rebels were 'slaughtered like partridges' in 'a devilish contrivance which none but a Yankee could devise'



Robert Hunt Library

How far at its end the American Civil War had progressed from the Napoleonic era and how close to the unfortunate philosophy of World War I is shown by the official report from Gen. Grant on taking over supreme command of the Union armies in 1864. He stated that his intended system of operations was 'to hammer continuously against the armed forces of the enemy, until by mere attrition, if by nothing else, there should be nothing left for him but an equal submission with the loyal section of our common country to the Constitution and the laws.' In accordance with this plan, on 3 May 1863 Grant launched the Army of the Potomac into the campaign to destroy Lee's Army of Northern Virginia. The Army of the Potomac had been raised to a strength of 140,000 men, against which Lee had been able to muster only 64,000.

Some two months later, after the tremendous battles of the Wilderness, Spotsylvania, and Cold Harbor, Grant's object was still not achieved, and the Army of Northern Virginia still lay between him and Richmond. The Army of the Potomac, in its unsuccessful assaults against entrenched positions, had lost 60,000 men—more than half its original fighting strength and more than the total fighting strength of the Army of Northern Virginia (which had lost 20,000).

William Swinton wrote: 'Had not success elsewhere come to brighten the horizon, it would have been difficult to have raised new forces to recruit the Army of the Potomac, which, shaken in its structure, its valor quenched in blood, and thousands of its ablest officers killed and wounded, was the Army of the Potomac no more.' In seeking to destroy the enemy army, Grant had nearly destroyed his own.

Because under Grant, as supreme commander, the Federals won the war, it has been widely believed that victory was due to his war of attrition in Virginia. Those holding this opinion, however, have missed Swinton's 'success elsewhere', which was Sherman's Atlanta campaign and his famous 'March to the Sea' while the Army of the Potomac was bogged down in trench warfare.

Brilliant tactician

There was an interesting tactical innovation during the Battle of Spotsylvania, which nearly led to a Federal success. Extensions of the Confederate trench system had resulted in a salient about a mile long stretching out towards the enemy and ending in a point which became known as the 'Bloody Angle', and which invited attack. A plan for an assault on a narrow front by a heavy column without firing was submitted by a brilliant tactician, Colonel Emory Upton, who commanded an infantry brigade.

The plan was approved and Upton was placed in command of an assault force of three brigades comprising 12 regiments. He formed these regiments into four lines. On breaking into the Confederate works, the first line was to divide, half going to the right and half to the left to sweep along the enemy trenches on both faces of the salient. The second line was to go through and then halt and face to the front to cover this operation, supported by the third line behind it; while the fourth line was to lie down in reserve at the edge of the wood in front of the Confederate position. The attack was launched at 1800 and took the Confederates by surprise, the Federals reaching and capturing the second line of trenches, together with 1,000 prisoners. Upton now consolidated and waited for Mott's Division which had been ordered to move up on his left and exploit success. The division never came, because the Confederate artillery spotted it, and it broke and ran under the subsequent heavy

fire. Upton was now counter-attacked from the front and from both flanks and driven back, losing about 20 per cent of his strength.

There is a striking similarity between Upton's tactics and those worked out by Major-General J. F. C. Fuller (then a Lieutenant-Colonel and GSO 1 of the Tank Corps) for the attack at Cambrai in 1917. Fuller was a keen student of the American Civil War and must have known of Upton's attack. As at Spotsylvania, the attack was a complete surprise and achieved remarkable success, but again, through inexcusable muddle, no reserves arrived and most of the gains were lost in the German counter-attack.

Suicidal tactics

What then, to summarize, were the ignored lessons of the American Civil War? The first, clearly, was that to send closely-packed waves of troops against enemy entrenchments was a recipe for disaster. It happened at Cold Harbor in 1864 and again at the first Battle of the Somme in 1916. Another lesson was that faced with concentrated artillery and small shot fire, renewed attacks were doomed to bloody failure. This was demonstrated at Fredericksburg in 1862 and at Cold Harbor and Spotsylvania in 1864 but also at Port Arthur (1904) in the Russo-Japanese War and in 1912 with the Bulgarian attack on the Turkish lines at Chatalja. A further lesson was that an attack which would inevitably lead to high casualties should not be attempted unless there was a high chance of ultimate success. Gen. Warren understood this at Mine Run when he withdrew his Federal forces but the point was ignored in the Loos offensive of 1916. Such tactics were suicidal with the increasing use of the rifle throughout the Civil War, and the greater rapidity of fire and increased range that this weapon conferred.

European observers were present at many of the critical campaigns of the American Civil War—so failure to take advantage of particular tactical or strategic developments was not the result of unreliable or incomplete information. Observers spent most of their time in the East so they did not gain a total view but the information was there—it was ignored or misinterpreted.

The reasons for this are understandable. European militarists had their own problems in the decades after 1865. The British were busy reforming the structure and administration of the Army after the scandals of the Crimea and India. Prussia was forcing the unification of Germany up to 1871—and then her thoughts were occupied with the possibility of a future war on two fronts. France, whose drill regulations had served both the Federal and Confederate Armies, was, until 1871, still basking in the fading glory of the first Napoleon's victories.

Also, the Civil War did not fit any pattern—it was unlike any war professional soldiers had seen before. The American armies were irregular forces of volunteers, conscripts and militiamen and though they became rugged campaigners as the months and years of war passed there was no way of judging them against other armies of the period. In addition, among the Germans and the French (at least until 1870 when crushing defeat forced a reappraisal) there was a firm belief in the need for a long serving, professional army. Clearly also, the type of terrain and the density of populations in which the American armies campaigned were outside the range of European experience, a factor which further diminished the scope for comparison.

Colonel H. C. B. Rogers

PATTON

He was flamboyant, profane, sentimental—and ambitious.
Then Patton's unorthodox leadership led him into trouble



A grim-faced Patton, flanked by eight generals and 'Willie' his bull-terrier, wait to greet General Eisenhower on a visit to Third Army HQ, 30 September 1944. The Lorraine campaign was meeting disconcerting resistance around the fortress of Metz.

General George S. Patton was a strange mixture of blood-thirsty ravings and military sentimentality. On the one hand he would scream at his soldiers: 'Remember. War is kill, kill, kill! You kill them or they'll kill you. The Nazis are the enemy. Wade into 'em and spill their blood! Shoot 'em in the belly! Rip out their guts with your bayonets!' On the other hand he could raise a glass and, tears in his eyes, propose a toast to his officers and their ladies: 'Here's to Army wives. God bless 'em!' And—under his breath—'They'll make such pretty widows.'

Few military commanders exhibit such glaring contrasts of character, least of all Americans, yet when one does the more powerful is his appeal. Such was the case of the Duc de Luxembourg, one of the most famous of Louis XIV's Marshals of France, whose eccentricities in the late seventeenth century caught the imagination of the English historian Lord Macaulay. And what attracted Macaulay was not the Marshal's incomparable military talent but rather his habit of living on active service in the same style and luxury as he did at Paris. His choice of military disposition was dictated as much by what good food and agreeable companions were to be found for his supper table as by their strategic soundness. The need to inspect fortifications or reconnoiter enemy movements usually gave way to the superior claims of cards and conversation in his tent. But when circumstances cried out for action, and contemplation had to be put aside, Luxemburg could be as fierce and swift to act as the most energetic and ascetic of commanders. Nonetheless, it is his eccentric attachment to good living that leaves the most lasting impression. It was an approach to warfare that would have appealed to George S. Patton.

And when we think of Patton, it is his eccentricity which we remember first! The tough, weather-beaten face; the ivory-handled revolvers; the profane and extravagant speech; the appeals to God to lay on good weather for his soldiers; the endless reiteration of 'Kraut-killing' and the insistence on Third Army's great mission.

Merits and shortcomings

Patton's merits and short-comings are best illustrated by his conduct during the battle of the 'Bulge' in the winter of 1944. On 19 December, three days after the German offensive in the Ardennes started and just as its scope and gravity were beginning to be realized, the Allied Supreme Commander, General Dwight D. Eisenhower, was conferring with three of his principal subordinates—Lieutenant Generals Omar N. Bradley and Jacob L. Devers, commanding 12th and 6th Army Groups, and Patton. Eisenhower made it clear that since the Germans had left the protection of the Siegfried Line defenses, they ran the risk of annihilation and there was every reason to be cheerful.

Patton responded with a typical comment: 'Let the sonnuvabitches go all the way to Paris!'; then they would 'cut 'em off and chew 'em up'. When Eisenhower outlined his plan for stemming the German advance by plugging holes in the American line and then counter-attacking the German bulge from the south with Third Army, Patton astonished and delighted his colleagues by stating that he could start his counter-attack on 22 December, only three days later.

This claim, fulfilled in practice, underlined one of Patton's greatest attributes as a soldier—an ability to turn his forces round with remarkable speed and skill. But Third Army's superb organization and aggressive enthusiasm to 'get up

and go' had serious flaws. Failure to disguise preparations and a prodigal use of radio communications told the Germans what was coming. That Patton, in the space of a few days, was able to break off one offensive in the Saar region; regroup his Army; switch half of it 90° north for a mid-winter attack towards new objectives, and actually get everything moving *on time* is a real tribute to his determination, flexibility and driving energy.

Patton's 3rd US Corps began to attack the southern flank of the German Ardennes penetration on 22 December, making its main effort along the Arlon-Bastogne road. It was especially important to relieve Bastogne, a key road center besieged by the Germans and vitally necessary to them, for its defiant stand was proving to be 'an abscess on our lines of communication', as General von Luettwitz, commanding 47 *Panzer* Corps, had predicted. Patton, brimming over with customary confidence, had expected to reach Bastogne and even St. Vith, by Christmas. He was in for a bitter disappointment. Nor was this surprising. For, whereas Patton's success in making troops available for the counter-attack was phenomenal, the actual deployment for the attack itself was a masterpiece of poor planning, insufficient preparation, and appalling tactics.

Zeal and blunders

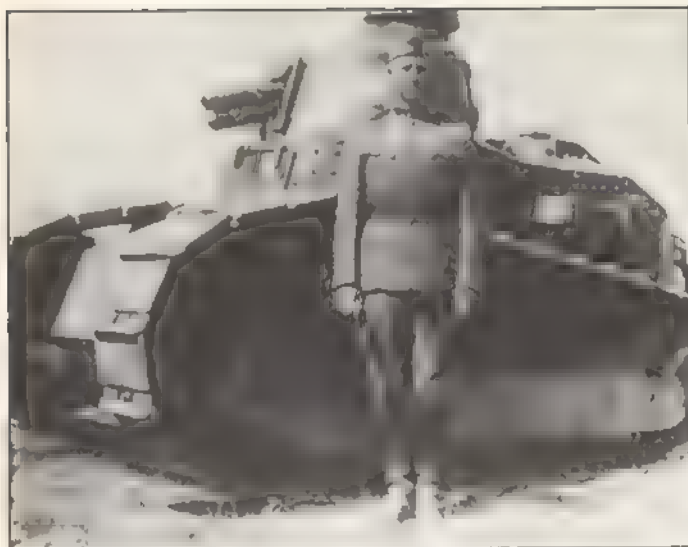
Furthermore, it manifested an extraordinary zeal for rushing ill-trained troops pell-mell into a battle where their baptism of fire would be discouragingly unpleasant—one of the worst blunders that a commanding general can make. In spite of this, and after four days of slogging forward, during which sheer weight of numbers and ironmongery overcame a skilful and obstinate German resistance, Bastogne was reached and relieved.

There was nothing new about Patton's love of sheer speed and activity for its own sake. In the North African campaign of 1942-43, it was a source of great regret and envy to him that he could not always be in the front line from the start and remain there until the very end. On the second day of Operation Torch, Patton spent 18 hours on the beaches driving his raw troops inland. But his bustling, determined methods were exactly what appealed both to the American soldiers he led and to his Allies who, beyond the showmanship, recognized an absolute conviction that only by *fighting* could the Germans be defeated. British war correspondent Alan Moorehead's glimpse of Patton in Tunisia caught the demeanor of the general at war:

'General Patton, a large and gregarious man with a fine weather-beaten face, and pearl-handled revolver strapped to his side, stood on a bare rock and surveyed the village of Gafsa a little uneasily. There was no answering gunfire from the enemy. He decided to go forward at once. "Go down that track until you get blown up," he said to his ADC, "and then come back and report".'

Yet underneath the hard-bitten pronouncements, the truculence, the contempt for fear and the longing for death or glory, lay a deeply sentimental nature, easily moved to emotional display. This combination of toughness and soft-heartedness sometimes got him into trouble. The celebrated face-slapping incident in Sicily in which Patton struck a soldier who 'just couldn't take it', seriously prejudiced his position as a commander and gravely embarrassed Eisenhower. Fortunately, Eisenhower stood firm against the public outcry and military misgivings, for he knew he could not afford to lose Patton's brand of leadership.

But, in spite of Patton's overbearing and swashbuckling



Only 32 years old in 1917, Lt. Col. Patton appears to dwarf one of his 'grotesque war babies' in the Tank Corps School. But he found the 6mph of this French Renault light-tank (37mm gun) so slow that he led his brigade on foot.

manner, his actual method of command conformed to the American tradition—that is, by committee. Matters of strategy and tactics would be freely discussed by his subordinate commanders and staff in a democratic way; a practice utterly foreign to the British way of war. And, having decided what was to be done, Patton then allowed other people to get on with it. 'Never tell people *how* to do things,' he subsequently observed. 'Tell them *what* to do and they will surprise you with their ingenuity!' Coming from a man who was a Virginian by descent and autocratic by inclination this was surprising and sound advice.

It was in the Normandy battles of July to August 1944, after the lessons learned during the North African and Sicilian campaigns, that Patton came into his own. The break-out from the Normandy bridgehead was exactly the task most suited to his talents, even though the plan had been engineered by a British general—the circumspect and calculating Montgomery. For it had always been Montgomery's intention that the British and Canadian armies should so tie down and 'write off' the German *Panzer* divisions in the eastern part of the Normandy bridgehead so that when the right moment came the Americans under Bradley would have little difficulty in bursting out of the western part.

On 15 July 1944, Field Marshal Erwin Rommel, commanding the forces containing the Allied bridgehead, had given it as his opinion that before long the enemy would succeed in breaking through the thinly held line and thrust deep into France. Ten days later the American break-out operation began. The initial punch was to be made by Bradley's First Army. Patton (his Third Army almost ready for action) was to follow up with the 8th US Corps. By his rapid maneuvers between 28 and 30 July, Patton succeeded in whipping 8th Corps through the gaps made by Bradley's attacks. He then advanced on Avranches, fanned out from there across the River Selune and reached Brittany.

On 1 August Patton, by this time in command of his Third Army, was ordered to secure the line St. Hilaire-Fougères-Rennes in order to protect the Avranches exit from the east, and then turn westward into Brittany. Putting his own very bold—and certainly liberal—interpretation on

these orders, Patton sent one Corps to motor straight for Brest and Lorient, while another made for Fougères and Rennes. In doing so, he disobeyed all the rules of movement discipline and traffic control; sent division after division over the vulnerable bottleneck of the Avranches bridge; and moved so fast that no fewer than seven divisions, 100,000 men and 15,000 vehicles, were despatched along this one road in three days.

His orders were: 'Get going and keep going till you get to Brest.' In this fashion the Third Army swept through Brittany and on to Orleans, Chartres and Dreux. Patton's divisions were sometimes covering 50 miles a day; a speed which astonished even those German generals who had first developed and applied the doctrine of *blitzkrieg*. They had not foreseen that the Americans would think and act with such initiative and daring. They had reckoned without Patton.

Like all controversial figures Patton inspired many revealing comments from those who served with him. Eisenhower, the most balanced and successful of all World War II American commanders, regarded command of an Army as the ideal position for Patton because 'for certain types of action he was the outstanding soldier our country has produced.' The Supreme Commander meant bold, thrusting cavalry-type moves with a powerful and flexible force, large enough to influence the outcome of battles, but not so large that grand strategic ideas were involved.

Bravado and ambition

Fortunately, Patton himself agreed with this estimate. Eisenhower recognized that underneath all the 'Blood and Guts' bravado lay a real student of war, an extremely able leader, who, despite his overriding ambition to be a successful commander, always received the loyalty and support of his subordinates and had a fine judgement of tactical situations.

Above all, Patton seized opportunities and fully exploited them: his dash for Palermo and Messina in July to August 1943; speed at disengagement and redeployment during the Ardennes battles; his subsequent crossing of the Rhine at Oppenheim with one regiment of infantry on 22 March 1945; and his tearing rush through the Palatinate, as the war drew to its close, simply confirmed an astonishing flair for rapid advance and improvisation. The only 'fly in the ointment' was that Patton regarded the operations of his own Third Army as the be-all-and-end-all of Allied strategic matters. This conviction ruled him even to the extent of getting his troops so committed to a battle that they needed supplies which would have been far better employed elsewhere. It also led him to ensure that his own command could be used only in pursuit of *his* aims; notwithstanding broader strategic options.

It was because Eisenhower valued Patton's generalship so highly that he was able to smooth over the Sicilian slapping incident. The blow itself had sprung from Patton's emotional state brought about by the strain of operations and the presence of many suffering, wounded soldiers. Patton rejected the psychiatric concept of 'battle fatigue'. And when a soldier, apparently unharmed, spoke of 'his nerves', the general flew into a rage. And when yet another man answered in similar vein, Patton actually swung his hand at the soldier's head, knocking his helmet off.

Afterwards Patton wrote to Eisenhower: 'I am at a loss to find words with which to express my chagrin and grief at having given you, a man to whom I owe everything and for

whom I would gladly lay down my life, cause to be displeased with me'. Eisenhower knew that underneath the hard-boiled attitude lay Patton's greatest handicap as a commander: his soft heartedness. The Supreme Commander tried to restrain Patton from making explosive and controversial public statements which did more harm than good. But despite all the difficulties and criticisms caused by Patton's indiscretions and extravagances, Eisenhower was right to retain him in command. 'You owe us some victories,' he told Patton, 'pay off and the world will deem me a wise man'. The victories were not long in coming.

Judicious and stimulating

Field Marshal Viscount Montgomery of Alamein is predictably cooler on the subject of Patton and in his book 'Normandy to the Baltic' makes no mention of the man or his doings. In his 'Memoirs' too, he offers no word of appreciation or praise. Bradley, on the other hand, while making use of proper qualifications, is lavish with it. 'Few generals could surpass Patton as a field commander. But he had one enemy he could not vanquish and that was his own quick tongue'. These two men made a good team. 'No longer the martinet that had sometimes strutted in Sicily,' wrote Bradley of his friend in July 1944, 'George had now become a judicious, reasonable and likeable commander'. And then again: 'His vigor was always infectious, his wit barbed, his conversation a mixture of obscenity and good humour—at once stimulating and overbearing, George was a magnificent soldier'.

To Patton, war was a holy crusade. At one moment he would kneel humbly before God and at another finish of his orders with a pronouncement perilously close to the worst sort of ham—'if his troops were not victorious in the next day's attack, then no one need come back alive.' Bradley was unable to accustom himself 'to the vulgarity with which Patton skinned offenders for relatively minor infractions of discipline'. He could not agree that profanity was necessary for communicating with troops. Patton, he thought, was undoubtedly a good corps or army commander, but was unable to command himself. 'While some men prefer to lead by suggestion and example, Patton chose to drive his subordinates by bombast and threats. These mannerisms achieved spectacular results. But they were not calculated to win affection among his officers or men'. That was true, but then the vast majority of military commanders have inspired fear rather than love. By this method Patton whipped the 2nd US Corps into shape after the débâcle of Kasserine in Tunisia during March 1943.

Yet one of the most extraordinary of Patton's achievements, his dashing field exploits apart, was the handling of his staff. Bradley recorded that he had not initially thought much of Patton's staff, either individually or as a team. The Ardennes battles changed all that. He saw that Patton had seasoned and coaxed his staff to be capable of the most brilliant efforts in turning Third Army inside out and pointing it in a different direction.

Moreover, Patton was even able to get excellent work out of mediocre material. Improvisation was, of course, his great metier, and in swinging his troops about and pushing them up the road to Bastogne, he improvised superlatively. Most of it was done on the telephone, adjusting and adapting from day to day as road capacities changed. However if dependability for your own side is the yardstick, then right up until the end of the war Bradley was able to be sure that Third Army would move swiftly and effectively.

When Patton was given the task of cutting off the so-called National Redoubt in Southern Germany during April 1945 (which, so far as a last stand by Nazi diehards was concerned, turned out to be myth), he rapidly reached Austria, drove down the Danube towards Vienna and was before long on the Czech frontier; Patton's farflung columns had driven 200 miles in three weeks.

Then he begged Bradley for permission to liberate the Czechs, and when the latter asked him why Third Army was so keen for the task, 'George grinned. "On to Czechoslovakia and fraternization!" he whooped, "How in hell can you stop an army with a battle cry like that?"' Patton could have entered Prague three days before the Russians; he even planned to 'get lost' on 6 May and report the city's capture to Bradley from a phone booth in Wenzel Square. But categorical orders from Eisenhower halted Third Army on the Czech border.

Patton's own account of affairs is naturally enough full of good stuff. One of the combat principles he laid down sums up his tactical ideas in a single sentence: 'Catch the enemy by the nose with fire and kick him in the pants with fire emplaced through movement'. It was just another way of describing the two basic elements of fighting, mobility, and applying agents of violence, but colorfully done and characteristic of the man. His letters show him in a broader light—wide interests (which ranged from horses and yachts to archaeology and ethnology), his humour and humanity, his religious convictions, his absolute dedication to a cause—these speak out clearly. Patton's unwavering confidence in himself, in the justness of the Allied cause and in God were emphasized by his prayer for fine weather on 23 December 1944.

'Get God to work . . .'

He told the Third Army Chaplain: 'I want you to publish a prayer for good weather. I'm tired of these soldiers having to fight mud and floods as well as Germans. See if we can't get God to work on our side'. When the chaplain objected that it was not customary to pray for fair weather in order to kill fellow men, he was sharply reminded that he was the Third Army Chaplain and was not required to give his commander a lesson in theology. The prayer produced fine weather and enabled the first of many airdrops to bring much needed supplies to beleaguered Bastogne.

What did the enemy think of Patton? The German view of the decisive battle for Normandy leaves us in no doubt about the conclusiveness of Patton's break-out. Major General Guenther Blumentritt, Chief of Staff to Field Marshal von Kluge, Commander-in-Chief, West, judged Patton to be the most aggressive of the Allied 'Panzer' Generals and spoke of his incredible initiative and lightning speed. It would be a view shared by all the former practitioners of *blitzkrieg*, who referred to his command not as the Third Army but as *Armeegruppe Patton*. Field Marshal Gerd von Runstedt, canniest German general of the war, made Montgomery and Patton strange bed-fellows in his estimation of old adversaries: 'the two best I met'.

Patton's pistols were so renowned that they even provided material for a book. He wore his pistols, sometimes one, sometimes a pair, endlessly—in North Africa, in Sicily, in France and in Germany. He used them in anger only once. This was at San Miguelito in 1916 during the Mexican War crisis, while serving with Gen. John 'Black Jack' Pershing.

Second Lieutenant Patton was in charge of a foraging expedition when he decided to combine this duty with a

hunt for a wanted bandit. It ended with a gun battle in the finest traditions of the Wild West. Three Mexicans, surprised by Patton's patrol, rode straight at the young officer and his companions, shooting as they rode. Patton returned their fire with his revolver. He hit one bandit who fell, then shot the horse of a second, killing the still shooting Mexican as he rose, and finally helped to run the third one to earth. Ironically, the gun he used was a Peacemaker. It was Pershing who saw Patton off to war again in October 1942, saying 'I am happy they are sending you to the front at once. I like Generals so bold they are dangerous.' When he subsequently wore a pistol together with the rest of his 'showmanship' outfit, it was, he confided to another general, because he wanted 'the men of the Third Army to know where I am and that I risk the same dangers that they do. A little fancy dress is added to help maintain the leadership and fighting spirit that I desire in the Third Army'. He was perhaps the last general to consider his personal weapons an important factor.

But he left his pistols behind him on the day that Eisenhower relieved him of command of Third Army in September 1945. It was the result of Patton's defiance of orders and his having left certain Nazi officials in key positions of the Bavarian district he commanded. It was the saddest day of his military life when he said goodbye to the Headquarters of his beloved Army. 'All good things must come to an end. The best thing that has ever come to me thus far is the honor and privilege of having commanded the Third Army'.

He wore one of the famous pistols once more at a parade south of Heidelberg, early in December. A few days later came the car collision which resulted in his death on 21 December. For eleven days, Patton fought to live against a

broken neck, paralysis, and lung embolism, leading to heart failure.

Eisenhower recorded that the Army had lost 'a brilliant figure' whose daring execution of bold plans 'struck terror at the heart of the enemy'. President Truman spoke of the great loss to the nation and of the inspiration which Patton's career had been. General Douglas MacArthur, a kindred spirit if ever there was one, called him 'a gallant romantic soldier of unquestioned greatness'. The 'New York Times', expressing its wonder that Patton had not died in battle because of all the chances he had taken, referred to him as 'spectacular, swaggering, pistol-packing, deeply religious and violently profane'. But it was plain that in this contradictory and outspoken figure lay both a unique tank leader and an earnest, profound military thinker.

Was George Patton, as some people have it, the best field commander in United States history? He had neither the political and strategic vision of MacArthur, nor the genius for management and compromise of Eisenhower, nor even the tactical grip and brilliance of Bradley. But if we may judge a commander by his imagination in making plans; his flair in organizing and training his troops; his thoroughness in equipping and administering them; and his character in making them feel capable of doing anything, then his claims must remain high.

Luck, eloquence and character were all attributes of the good general that Patton displayed. He had a quick eye and a stout heart, although not always a cool head. And he was the last commander to consciously act the part of a warrior, the last Napoleonic general in a century of mass-warfare.

John Strawson



For once a happy trio. Patton, Bradley and Montgomery enjoy a joke, watched discreetly by the latter's Chief of Staff, Maj-Gen. Francis de Guinand. But Patton, on his first day in Normandy, has yet to steal the laurels of the campaign

SICILY

Axis-occupied Sicily fell to massive Allied assault in 1943. But why were 40,000 elite German troops allowed to escape ?

The invasion of Axis-occupied Sicily, Operation Husky, in July 1943 was the greatest seaborne assault of World War II. Almost eight divisions—181,000 troops—were simultaneously put ashore along a hundred mile stretch of the island's coastline. Backing the men was an array of technological expertise and military might that from then on was the hallmark of the Western Allies at war: 14,000 vehicles; 600 tanks; 1,800 guns; 750 warships (including six battleships, 15 cruisers and 128 destroyers) and 5,000 aircraft. For Sicily, the United States contributed her latest inventions—the 'walkie-talkie' radio, and the versatile DUKW six-wheeled amphibious truck. By contrast, in the invasion of Normandy a year later, only 133,000 men were landed over the 45-mile stretch of D-day beaches. Husky marked not only the return of the Allies to the mainland of Europe, but also signalled their determination to knock Mussolini's Italy out of the war.

By January 1943 it was apparent that the Axis forces in Tunis were trapped in the vice being closed by the Allied armies from west and east, and that their destruction was only to be a matter of time. Field Marshal Albert Kesselring, Axis Supreme Commander in the Mediterranean, predicted that the Allies would soon be 'in possession of a jumping-off base for an assault on Europe from the south'. There was an urgent need, therefore, for President Franklin D. Roosevelt and Prime Minister Winston Churchill to meet with their Chiefs of Staff to decide the next move. They met on 14-23 January 1943 in French Morocco for the Casablanca Conference, with Major General George S. Patton, commanding the United States forces in Morocco, as host.

Operation Husky

After discussing—and discarding—the possibilities of a second European front to take the strain off the hard-pressed Soviet Armies, the conference decided that when the North African campaign was over, the Allied forces, under General Dwight D. Eisenhower, should stage Operation Husky—the invasion of Sicily by two armies, one American, under Patton, and one British, led by General Sir Bernard Montgomery, both under command of General Sir Harold Alexander. It was hoped to placate Stalin by drawing German forces away from the Russian front; to open up the Mediterranean to Allied shipping; and to give the war-weary Italians an excuse for overthrowing Benito Mussolini and getting out of the war.

Sicily is about the size of the state of Vermont, and a little larger than Wales. The terrain generally favors the defense. Inland, the ground is rugged and mountainous, with Mount Etna, in the north-east corner, rising to 10,000ft. Good roads ran along the east and northern coasts; elsewhere they were few, badly surfaced and with many sharp corners and steep gradients. Deployment off the roads would

inevitably be difficult. Only in the Plain of Catania could armor move with any degree of freedom. The Allied plan made the capture of the 30 Sicilian airfields a priority, for it was these bases that posed such a threat to Allied shipping in the Mediterranean. They had also sustained the Axis defense in Tunisia. The airfields fell into three groups: the Gerbini group in the Plains of Catania; the Castelvetro group south-west of Palermo; and the Conte Olivio Comiso group near the south coast ports.

Combined operations were still in their infancy. No one knew to what extent it would be possible to maintain the invading forces over the beaches with the DUKWs, LSTs, LCMs and LCIs. It was therefore considered vital to gain possession of the major ports as soon as possible. Messina, the largest of these, was out of fighter range and known to be strongly defended. Palermo, Trapani and Marsala, also out of fighter range, could maintain about half the invading force; Catania, Augusta and Syracuse, within range, would supply the other half. Operation Husky was proving as formidable to prepare as Operation Torch, the previous (and first) Anglo-American amphibious landing of the war.

Airfields and ports

For the assault the admirals stressed the advantages of dispersed landings from the naval point of view. The airmen, their case forcibly put by Air Chief Marshal Sir Arthur Tedder, demanded the neutralization of the airfields on the island as a first priority: both British and American logistic staffs insisted that they must have the use of Palermo and the southern and south-eastern ports at a very early stage. After seven invasion plans had been discussed, Eisenhower gave the final decision: the two armies would land side by side, the Seventh US Army about Gela and the Eighth British Army in the south-east corner of the island. July would be the deadline for the landings.

Most post-war comment gives the impression that the Americans and British in the Mediterranean were continually at loggerheads. But the reverse was the case, due largely to the magnanimity and vision of Eisenhower, the Supreme Commander. Seldom did the Allies work together so cheerfully and unselfishly. Eisenhower had in Alexander the most experienced and tactful commander in the British Army to handle his two brilliant but brittle Army commanders—Patton and Montgomery. Finally in Vice Admiral Sir Bertram H. Ramsay, his Deputy Commander, he had the admiral who had organized the largest evacuation in history—Dunkirk—to help him execute the largest combined operation in history.

The air strength of Tedder and Lieutenant General Carl Spaatz (USAAF) was formidable—267 squadrons, 146 of which were American and the rest British, totalling over 5,000 aircraft and thus outnumbering the 520 Axis planes by

10 to one. Immediately after the fall of Tunis, the Allies turned to the task of securing the air dominance over Sicily which must be gained before a single ship could safely approach it or one soldier step ashore. First, the Allied aircraft ranged far and wide against strategic targets in Italy. Then they began an intense bombardment of the enemy airfields and radar stations within striking distance of Sicily and the proposed routes of the convoys. Tedder interrupted the first stage of his air plan to seize Pantellaria; the island fortress Mussolini had constructed as rival to Malta.

Starting in May, the bombardment of this island gradually increased in intensity till 7 June. Thereafter for four days it rose to a crescendo: over 5,000 tons of bombs were

land his Seventh Army on a 70-mile front in three simultaneous seaborne assaults; two on the east flank by Major General Omar N. Bradley's 2nd Corps with 45th Division at Scoglitti and the 1st at Gela, and 3rd Division (Major General Lucian K. Truscott), directly under his own command, at Licata. As a floating reserve he had 2nd Armored Division and part of 9th Division. All were battle-hardened with the exception of 45th Division.

Initially Alexander prescribed the establishment of beach-heads and the early seizure of Syracuse, the Pachino and Ponte Olivo airfields and the port of Licata. Thereafter Montgomery was to seize Augusta, Catania and the Gerbini group of airfields. Patton planned to advance about 15 to



Packed with men and machines, the USS LST 325 waits patiently to get ashore at Gela, Sicily, on 11 July 1943. The American light-cruiser Boise steams slowly by, blasting shore defenses with two of her three forward 6in gun turrets

dropped. On 10 June, the third anniversary of Italy's entry into the war, a force from 1st British Division approached the island covered by a precision attack by American flying Fortress B17 bombers. The garrison of 4,600 surrendered without a struggle. For the first time victory had been gained by air power alone.

At the end of June, Alexander's plans for the assault were complete. Montgomery and Eighth Army, embarking at ports between Syria and Sfax were to land on a 30-mile front with two corps, 13th Corps (Lieutenant General Sir Miles C. Dempsey) just south of Syracuse and 30th Corps (Lieutenant General Sir Oliver Leese) astride the Pachino peninsula to capture the airfield there. Patton planned to

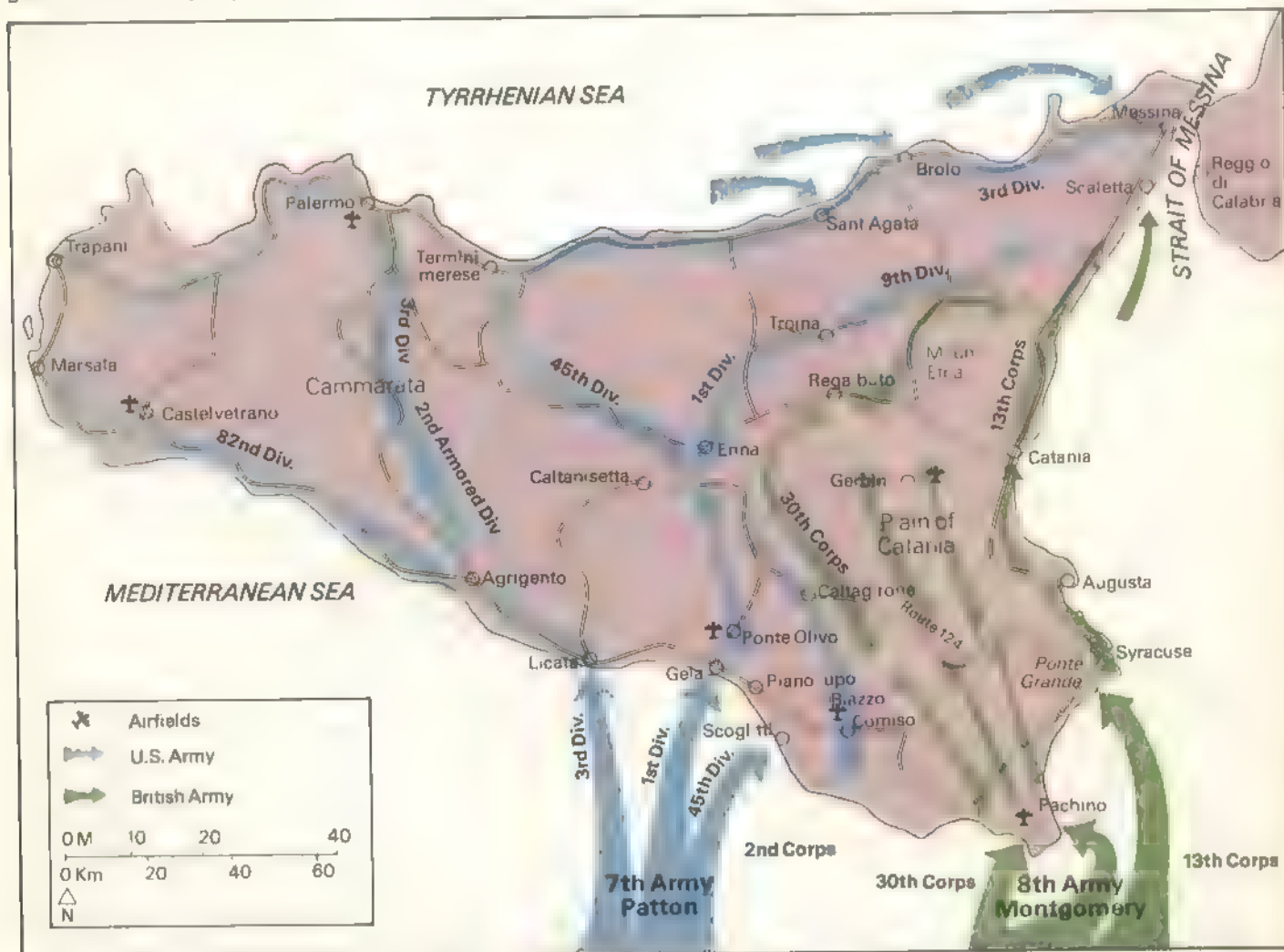
20 miles inland on the first day. Both armies were to link up on a common boundary—the Yellow Line. But what was to be done thereafter was, unfortunately, not clear. Patton suspected (with good reason) that the major role of exploitation would be given to Montgomery. He protested to Alexander but when over-ruled, like a good soldier for the moment raised no further objection. Both British and American landings were to be preceded by airborne assaults; the British 1st Airborne Division in gliders and the 82nd American Airborne Division parachuting.

Meanwhile, in early June, Generale d'Armata Alfredo Guzzoni, had assumed command of the Italian forces on the island with his Sixth Army headquarters at Enna. He

found, even by Italian standards at this stage of the war, an appalling situation. There was a total Italian garrison of 30,000 men and 1,500 guns but only four divisions out of 12 were relatively mobile. The rest were scattered in low-grade coast defense units on the scale of 41 men to the mile. Many of them were of local origin and virtually untrained; the standard of their officers was exceptionally low. Most of their arms and equipment were obsolete and the coast defenses, except near the ports, were either perfunctory or non-existent. One Corps headquarters presided over the destinies of these depressing troops at the east end of the island and another at the west. Only German assistance gave cause for any hope.

under Colonel Schmalz in the Catania Plain. With these troops and the *Livorno* Division, south of Caltanissetta near the Ponte Olivo airfield, the Axis counted on holding the ring by rapid counter-attack until reinforced by the rest of 14 *Panzer* Corps from the mainland.

The day before the invasion, 9 July, started hot with scarcely a ripple on the sea. Rear Admiral Louis Mountbatten, the British Director of Combined Operations, with Adm. Ramsay on board the command ship *Antwerp*, watched the six invasion convoys as they passed on their way to the rendezvous south of Malta. Seven and a half divisions, totalling 160,000 men, were afloat in 2,760 ships and landing craft. They came the Clyde, from Norfolk, Virginia;



Operation Husky—the invasion of Sicily began on 10 July 1943. It was the greatest sea-borne assault of World War II.

Guzzoni had attached as adviser Major General Fridolin von Senger und Etterlin, a Bavarian who had distinguished himself at the head of a *Panzer* Corps in Russia. Detached from 14 *Panzer* Corps on the mainland were 15th *Panzer Grenadier* Division under Major General Eberhard Rodt and Hermann Goering *Panzer* Division under Lieutenant General Paul Conrath, a former Nazi police chief, making a total of about 30,000 troops and including a Tiger tank company of 17 Mark VI tanks and approximately 90 Mark IIIs and IVs.

Anticipating landings at opposite ends of the island, as the Allies had originally planned, Guzzoni and von Senger deployed 15th *Panzer Grenadier* Division in the west and the Hermann Goering Division in two battle groups; one near Caltagirone about 20 miles north of Gela and the other

and ports along the African coast from Beirut to Algiers. Incredibly there was not a single enemy aircraft in the sky.

At noon, a light breeze sprang up from the west; by mid-afternoon it was blowing Force 7. Almost all the troops in the smaller craft were sick. As the British came under the lee of the land, conditions for them improved but for the Canadians and Americans there would be no respite. They would have to land sick to death and soaked to the skin. But the rough weather was not an unmitigated disaster. Most of the defenders of the Sicilian coast retired to bed, deciding that no man in his senses would attempt to land in such conditions.

First to land in the blackest hours of the night were the British 1st Air Landing Brigade in Waco and Horsa gliders.

Their target was the Ponte Grande area near Syracuse. But it was disastrous. Partly owing to the lack of experience of the pilots of their towing aircrafts and due also in part to the high winds their landing was widely scattered. Seventy of the 134 gliders were released too soon and lost in the sea. Only eight officers and 65 men out of a total 2,075 emplaned in Africa, reached their objective. But they managed to hang on until relieved by the 5th British Division. The 82nd Airborne Division (for the same reason) had an equally difficult landing. About 200 paratroopers of 505th Parachute Regiment managed to seize the vital high ground near Piano Lupo to set up and defend road blocks. They were to prove of great value when the expected counter-attack came later that day. Others roamed far and wide, cutting communications and generally spreading despondency and alarm amongst the Italians, rudely awakened from their slumbers.

On the Eighth Army front the guns of the four supporting battleships quickly silenced any coastal batteries and field guns that dared open fire and the landing proceeded smoothly, partly owing to the thorough training the troops had received and partly to the absence of Italian resistance. At one stage, Montgomery received a report that the Royal Marines had been charged by cavalry! In fact they had inadvertently stampeded the horses of the Italian 206th Coastal Division. These they rounded up, mounted and themselves charged inland. By nightfall the British had taken Syracuse and all their objectives for the day.

Mountbatten: 'Impressed'

On the American front, 45th Division at Scoglitti, although delayed for an hour by the gale, had similar good fortune. At Licata, 3rd Division, in the new beaching craft (LSTs, LCIs and LSTs), landed on time and almost without a hitch. Mountbatten was impressed by the coolness, discipline and efficiency of the US Navy crews and the rapid organization of movement inland. By 0830, guns and tanks were freely coming ashore. Only at Gela, was there serious opposition.

As Force X, a special force of Rangers attached to 1st Division, approached the shore, the enemy blew up the pier. Simultaneously the coast defense guns opened up. But they were quickly silenced by devastatingly accurate fire from the 5in and 6in guns of the destroyer *Shubrick* and the cruiser *Savannah*. As the Rangers touched down they dashed forward into Gela with the leading troops of 1st Division close on their heels. By 1000 Patton, in the headquarters ship *Monrovia* with Vice-Adm. Hewitt, had 3rd Division holding eight miles of coastline and forces moving rapidly inland. At Gela 1st Division held the road junction of Piano Lupo, the town itself and the airfield. The 45th Division reported that its leading troops were five miles inland.

Now that the Allies had shown their hand, Gen. Guzzoni's reaction was prompt but ill-starred. Clearly there was no risk of a landing at the Palermo end of the island. *Kampf Gruppe Schmaltz* could be relied upon for the moment to guard the Gerbini group of airfields. The major threat was posed by the Americans at Gela. Guzzoni therefore set the 15th *Panzer Grenadier* Division in motion towards Enna, thus creating a reserve under his own hand, and ordered the *Livorno* Division, plus two mobile groups and the *Hermann Goering* Division, to make a co-ordinated attack on Gela and drive the Americans into the sea. The orders for the *Hermann Goering* Division went astray; in consequence

the Italians attacked on their own at 0830 with infantry and about 20 light tanks. They struck the 16th Regimental Combat Team supported by the guns of the Navy who were in no mood to be pushed aside. Their attack was a costly fiasco.

The German counter-attack during the early afternoon came with greater vigor, accompanied by heavy shelling of the beaches and determined low-flying attacks by the *Luftwaffe* on the mass of shipping now lying offshore. Despite the courage of the Germans it was a muddled affair and came to nothing. About an hour later they renewed the attack, this time supported by Tiger tanks. This too petered out in confused fighting which continued till nightfall,



This Goumier's expression seems to bode ill for the Germans in Sicily. His bayonet is being sharpened in preparation for a night attack. In August 1943 his unit was used to support the US 1st and 9th Divisions at Troina, one of the bloodiest actions during Husky. The campaign ended on 17 August.

leaving the Americans in possession of all their first day's objectives except the Ponte Olivo airfield.

To Patton it was evident that 11 July would be the crucial day and that his army would have to bear the brunt of a full-dress counterstroke by the bulk of the German armor. To the consternation of the staffs, he therefore scrapped the pre-arranged landing schedules and ordered 2nd Armored Division and the 18th RCT ashore with all speed. Disembarkation proceeded at a frantic rate throughout the night. He was thus ready to meet the thrust on Gela soon after

dawn by the *Hermann Goering* Division who attacked in three columns from the east and by the *Livorno* Division from the west. When he disembarked from Adm. Hewitt's barge at 0900, German 88mm guns were pounding the beach. When his scout car had been de-waterproofed he set off into Gela for the headquarters of the 1st Division. On the way he decided to look in on the HQ of Colonel Darby, one of the Rangers.

It was a lucky decision. In fact, the *Hermann Goering* Division had cut off the 1st Division from the Rangers and a confused battle was raging along the eastern outskirts of the town. From an observation post close to the front, Patton was able to watch a battle between the Rangers,

DUKWs, went straight into action and engaged the German tanks over open sights. The infantry of the 1st Division stood like a rock. Three miles inland, the Germans reeled back before the 16th Infantry at Piano Lupo. Meanwhile, the tanks of 2nd Armored Division struggling through the sand of the beaches roared into action. Deadly and accurate fire from the Navy added to the inferno. The German tanks faltered and then turned back leaving over half their number behind in flames. Patton then got through to Major General Terry de la Mesa Allen, commander of the 1st Division to congratulate him and at the same time remind him that he still had to take his D-day objective, Ponte Olivo airfield, four miles inland. Meanwhile, farther to the east, the para-



With bayonets fixed, British troops advance past the body of a fallen Italian soldier. They are the final moments during the storming of a Sicilian railway station. Troops of the seasoned British 8th Army had invaded Sicily on 10 July 1943.

using a captured battery of Italian 77mm guns and *Livorno* Division. Every gun the enemy could bring to bear was used. They turned Gela into a shambles. In the nick of time, 10 Shermans joined in the fray, having driven all the way from Licata. Deadly and accurate fire from the 6in guns of the *Savannah* was brought to bear on the *Livorno* Division. By mid-morning they had had enough and retired badly mauled.

Patton now moved on to the 1st Division's front which only had two tanks ashore. Outside the town Conrath had flung in all his 60 tanks with orders to hurl the Americans into the sea. Burning tanks soon littered the Gela Plain. The 32nd Field Artillery Battalion, disembarking their guns from

troops had put up a magnificent resistance on Biazzo Ridge and disembarkation had continued. By nightfall the bridgehead at Gela was secure. As Patton had foreseen, this was the bloodiest day of the campaign.

An unfortunate incident that night marred a story of outstanding success. Patton had arranged for 504th Parachute Regiment, consisting of two battalions of parachutists, to be dropped on the Gela airfield and had taken every precaution to warn his own troops of the operation. He and his staff were assured that all the anti-aircraft gunners of the huge supporting fleet had also been told. Regrettably, and perhaps due to the 550 Axis air sorties in two days, enemy AA guns in the fleet opened up against the aircraft carrying

the parachutists. As a result, the men were dropped far and wide. When daylight came, out of 2,000 men and equipment all that could be mustered at the landing zone were a scratch company and a few light howitzers.

With both Eighth and Seventh Armies firmly ashore, the first phase of Operation Husky was nearing its end. By the evening of 12 July Montgomery had captured Augusta and was on the point of advancing on a front of four divisions into the Catania Plain. Patton had linked up with him and was nearing the Yellow Line 20 miles inland which was his first objective. Meanwhile, Guzzoni had been moving his armored forces into the Catania Plain and reinforcements from 14 *Panzer* Corps were arriving opposite the British front. The time had clearly come for Alexander to decide which line of advance the Allied armies should take. It seemed obvious to the Americans and others that Patton rather than Montgomery was better sited to strike due north on Enna and the north coast.

On 14 July, Montgomery, in his drive towards Catania, found himself held up by 29th *Panzer Grenadier* Division and two regiments of parachutists flown in from Avignon as well as Battlegroup Schmalz. General Hans Valentine Hube, of 14 *Panzer* Corps, a one-armed veteran of the Eastern Front, had taken charge. Montgomery, without even mentioning the fact to Patton (but apparently with Alexander's acquiescence), now set in motion a left-hook round the foot of Mt. Etna on Route 124, which was within the American area of operations. Of the three good roads running north he now had two. That evening, to the consternation of Patton and Bradley, a directive arrived from Alexander allotting to Montgomery the main effort against Messina, on both sides of Mount Etna.

Consolation prize

The Americans, cramped for space and resentful of the fact that they had not even been consulted, found themselves relegated to the invidious task of guarding the British left flank. Later, they were to have the consolation prize of a ride to Palermo, when Messina was in Montgomery's grasp. Stung, Patton took off for Tunis to see Alexander and to express his disappointment. Only now did Alexander realize how deeply Patton felt the affront. But it was too late to halt Montgomery. Alexander therefore gave Patton a free hand in advancing towards Palermo and the north coast.

Released from his strait-jacket Patton launched his spectacular all-out drive on Palermo. To this end he created a provisional Corps under Major General Geoffrey T. Keyes, his Chief of Staff. The 82nd and 3rd Divisions were to make for Palermo from the south and south-east, with 2nd Armored Division in their wake for the final advance on the city. Meanwhile Bradley's Corps was to strike due north and cut the coast road. During a six-day lightning campaign in torrid heat Keyes' Corps, with the infantry riding on the tanks, thrust forward 100 miles and took 53,000 prisoners. On 22 July Patton, with 2nd Armored Division, entered Palermo in triumph to the plaudits of the inhabitants and took up his quarters in the Royal Palace. Next day Bradley's Corps reached the north coast at Termini Imerese.

An American M7 self-propelled gun moving up to the front in Sicily. On its first appearance in the North African desert in 1942, British troops nicknamed it the 'Priest' from the pulpit-like nature of the machine-gun mounting. The vehicle is a standard 105mm howitzer set on a M3 tank chassis.

After the war attempts were made to detract from Patton's achievement. It was claimed that, before the campaign started, contact had been made by Intelligence officers through 'Lucky' Luciano, head of the Mafia in the United States (and serving a 30-year prison sentence), with his opposite number in Sicily, Don Calogero Vizzini, to ensure that the Italian troops put up no resistance to the invaders. In particular, it was alleged that Mafia agents persuaded Colonel Salemi's battle group (consisting of a battalion, some field guns and several Tiger tanks) holding a very strong position in the mountainous Cammarata area which dominated the two roads to Palermo, to let Patton's columns through on 20 July. That there were contacts with the Mafia in Sicily is probably true—they would have been almost impossible to avoid—but to suggest that their influence was in any way decisive is ludicrous.

With every justification the Press were jubilant. The Americans now had a deep-water port capable of handling ships coming direct from the United States and were no



longer dependent on supply over beaches; the 9th US Division landed at Palermo. Magnanimously Patton restored his Sicilian prisoners to their families, which reduced the demand on Allied food supplies. Alexander now directed Patton to swing along the north coast towards Messina. Montgomery was to make a short hook with the Canadians about Regalbuto to give Bradley room to maneuver. Thus the so-called inter-Allied race for Messina.

Although the Allies had not secured a military decision in Sicily their progress now finally precipitated the fall of Mussolini and his government. Hitler was still sane and the time had not yet come when a policy of 'No withdrawal' would be his strategic panacea. The disasters at Stalingrad and in Tunisia, and now his appalling losses in his Russian summer offensive, Operation Zitadelle, at last brought home to him that his man-power resources were running down. On 26 July, the day Marshal Pietro Badoglio arrested Mussolini, Hitler gave Kesselring permission to abandon

Sicily, before the Allies made their invasion of Italy.

Next day Kesselring, ignoring Guzzoni, told Hube to prepare for evacuation. The chances of success must have seemed slim, for he gave orders that men rather than equipment were to have priority. Hube accordingly planned a slow withdrawal to a series of five defensive positions across the Messina peninsula. The rugged country was in his favor: it gave him magnificent artillery observation; the roads were narrow and winding, often passing through defiles which were easy to block. The anti-aircraft defenses at Messina under Colonel Ernest Guenther Baade were very strong and Captain von Liebenstein of the German Navy had an excellent ferry service across the three-mile-wide straits.

When Patton and Montgomery resumed operations at the end of July they found themselves condemned to attack side by side against a series of excellent defensive positions held by first class troops, whose morale remained unshaken. For neither the British nor the Americans was there great scope for maneuver: German mines and demolitions harassed their every move. Montgomery had 13th Corps on the right and 30th Corps on his left. In Seventh Army, 45th and 1st US Divisions led first, later giving way to 3rd and 9th Divisions. The weather was hot and the dust appalling. There were many casualties from malaria. Patton, determined at all costs to reach Messina before Montgomery ordered 'a sustained relentless drive until the enemy is decisively defeated'. Inevitably the terrain channelled the advance along narrow lanes or on to ridges and up valleys devoid of cover and in full view of the enemy's artillery observers. Air co-operation on the fronts of both armies left much to be desired. There were far too many incidents of friendly aircraft bombing their own troops.

Patton's decision

At Troina, the 1st Division, slogging along rugged hill-sides to outflank immensely strong German positions, fought for four days the bitterest battle of the campaign. Allen and his deputy commander were at loggerheads; their men were tired and beginning to feel that they were being called upon to shoulder more than their fair share of the fighting, having been through the whole Tunisian campaign. When Troina finally fell, on 6 August, Patton had to take the decision to relieve both the divisional commander and his deputy.

Exasperated by the delay and worried by the increase in the numbers of men evacuated with battle neurosis, Patton staged three amphibious hooks. But incredibly only enough landing craft could be provided to lift a battalion group. The first run was abortive. The second landed at Brolo on 11 August just behind 29th *Panzer Grenadier* Division's position on the north coast road. It was not strong enough to cut off the battlegroup opposing 45th Division but, helped by the fire of American warships, accelerated the German withdrawal by 24 hours. Regrettably the *Panzer Grenadiers* made up lost time by hanging on to the next position for an extra day. For the night of 15 to 16 August Patton staged a further end run, this time of regimental size. It was a blow in thin air. The Germans had fallen back to the next position and the amphibious force waded ashore not behind the Germans but to meet the leading infantry of 3rd Division.

A similar landing by No. 40 British Royal Marine Commando, just south of Scaletta on the same night, found nothing to stop it except demolitions. But so impeded was their advance into Messina that when they entered the town on the morning of 17 August they found that the 7th



Imperial War Museum



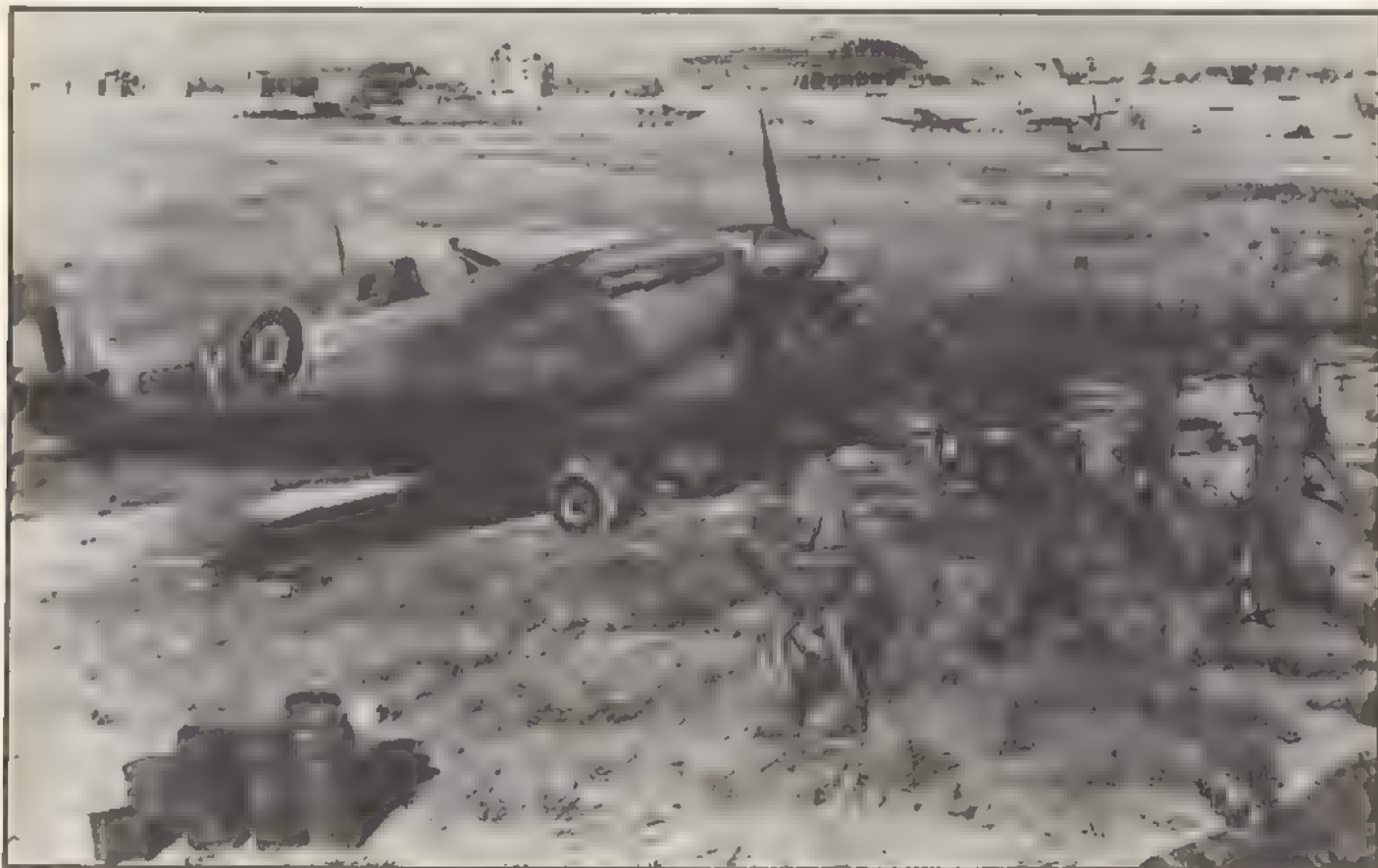
1 A sudden end to the war for an Italian M13/40 tank of the Livorno Division in Sicily. A 'brew-up' was the tank crews' nightmare. But the Italian troops fought well and bravely in spite of their out-of-date and under-powered weapons.

2 The Spitfire flew in every zone of World War II. This Mk. V has landed on a captured German airfield. Armed RAF Regiment personnel are about to service the plane. A large



sand filter is fitted over the air-intake below the prop. This was a modification following engine trouble during desert operations, when it was found that sand was being sucked into the engine during take-off and low-flying.

3 Sherman tanks knocked out by German panzer units in the Sicily fighting. The power of AT guns is evidenced by both tanks having had their turrets blown away. Troops





of the Hermann Goering Division move in to inspect the results of their attacks on the armored units.

4 American wounded after action during Operation Husky. General George S. Patton, commanding the 7th Army, leans over to talk to Private Frank A. Read, of the 7th Inf. 3rd Div. Suffering from shrapnel wounds the soldier is awaiting evacuation to North Africa for further treatment.



Infantry Regiment of 3rd US Division had arrived ahead of them, and Patton had won the race to Messina. He had already accepted the surrender of the city at 1015. There was an element of anti-climax in these last days of the campaign. Despite the overwhelming strength of the Allies in the air and on the sea, Hube had succeeded in evacuating nearly 40,000 German troops with 9,605 vehicles, 47 tanks, 94 guns and 17,000 tons of ammunition. It was a miniature German version of Dunkirk in which typically they had saved a much greater proportion of their heavy equipment than the British. In addition some 62,000 Italians had escaped across the straits.

Baedes' 350 dual-purpose anti-aircraft guns had maintained a barrage described as 'heavier than the Ruhr', over the four evacuation routes starting on 11 August, along which 140 small craft plied. From 13 August, von Liebenstein decided to risk working by daylight as well as by night. Losses were remarkably light. Surprisingly, the Allies did not realize until 14 August that the Germans were pulling out. Judged objectively by professional standards, Hube and von Liebenstein were the winners of the race to Messina.

Kesselring was astonished that the Allies should have failed to secure an overwhelming victory, in the last week of the campaign, by landing another amphibious force on the toe of Italy, seize the ferry terminals at Reggio and hamstring the withdrawal across the Straits of Messina. The Allies had ample reserves of troops in North Africa. Their navies could have provided the landing craft if they had been asked and would not have hesitated to bring their big ships within range of the coastal batteries if ordered. They had unchallenged superiority in the air which they failed to concentrate over the straits.

Eisenhower's choice

Finally, Adm. Cunningham was not prepared to risk his warships in the straits at night; the only other foolproof method of disrupting the frantic Axis ferry service. There was no capitulation in Sicily because, before the landing, no agreement had been reached as to whether or not Husky should be followed by the invasion of Italy. It was therefore left to Eisenhower to exploit his victorious landing as he thought fit. As operations progressed, Alexander failed to use his initiative, awaiting orders which never came.

Nevertheless, the campaign had achieved its major objects. It had unseated Mussolini. It had set in motion the negotiations, through the British embassies in Lisbon and Madrid, which would soon result in the Italians abandoning their German Allies and surrendering their fleet. The Mediterranean was at last freed for Allied shipping and in particular for tankers from the Persian Gulf.

Much battle experience had been gained and many good commanders, notably Bradley, had come to the fore. Casualties, at 9,000 British and 8,735 American, were remarkably light. The Germans had lost 32,000 and the Italians 132,000, mostly prisoners of war. And the threat the Allies now offered to 'the soft underbelly of Europe', although it did not swing Turkey over to the Allied side, undoubtedly induced Hitler to call off the ghastly battle of Kursk (Zitadelle) on 14 July and to divert reserves from the Russian front in order to retain his grip on the Italian mainland. The experience gained in the invasion of Sicily, especially in amphibious operations, ensured the success of Overlord, the invasion of North West Europe less than a year later.

Hubert Essame

CONVOY HX112

Shipping losses in 1940 were mounting: U-boats could read Allied naval cipher. But suddenly the Royal Navy struck



In 1940, Atlantic convoys were notable for their long periods of alert boredom, interrupted by times of sudden, frantic action. Author of this article, Capt. Macintyre (inset) commanded the escort group for Convoy HX112 in HMS Walker.

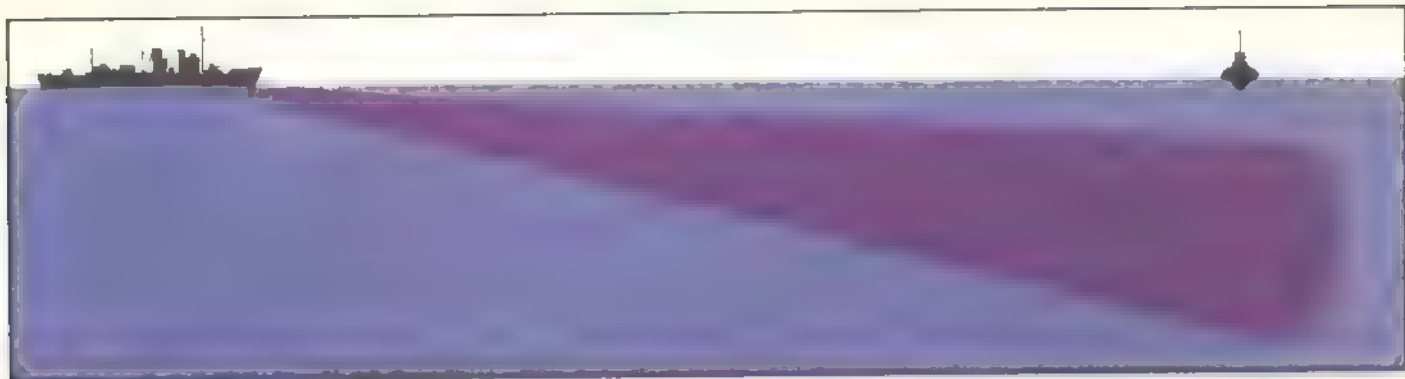
A tanker or merchantman, unarmed and with no armor protection, is easy prey to submarine attack. This fact was proven during World War I when the convoy system was developed after terrible shipping losses in the English Channel. The same huge sinkings were experienced by merchant ships at the outset of World War II in September 1939. During the summer of 1940 and on through the winter, British convoys had been suffering crippling losses in the North Atlantic. The escorts, weak in numbers and lacking training as teams, seemed unable either to prevent these losses or to destroy the attackers.

The German U-boat commanders had discovered that asdic (the submarine detecting device in British warships) was ineffective against surfaced submarines. Detection depended upon the human eye with the doubtful aid of starshell. The low outline of a U-boat makes it almost invisible from the bridge of escorting vessels. And if the speed was kept down, the conspicuous white foam of bow

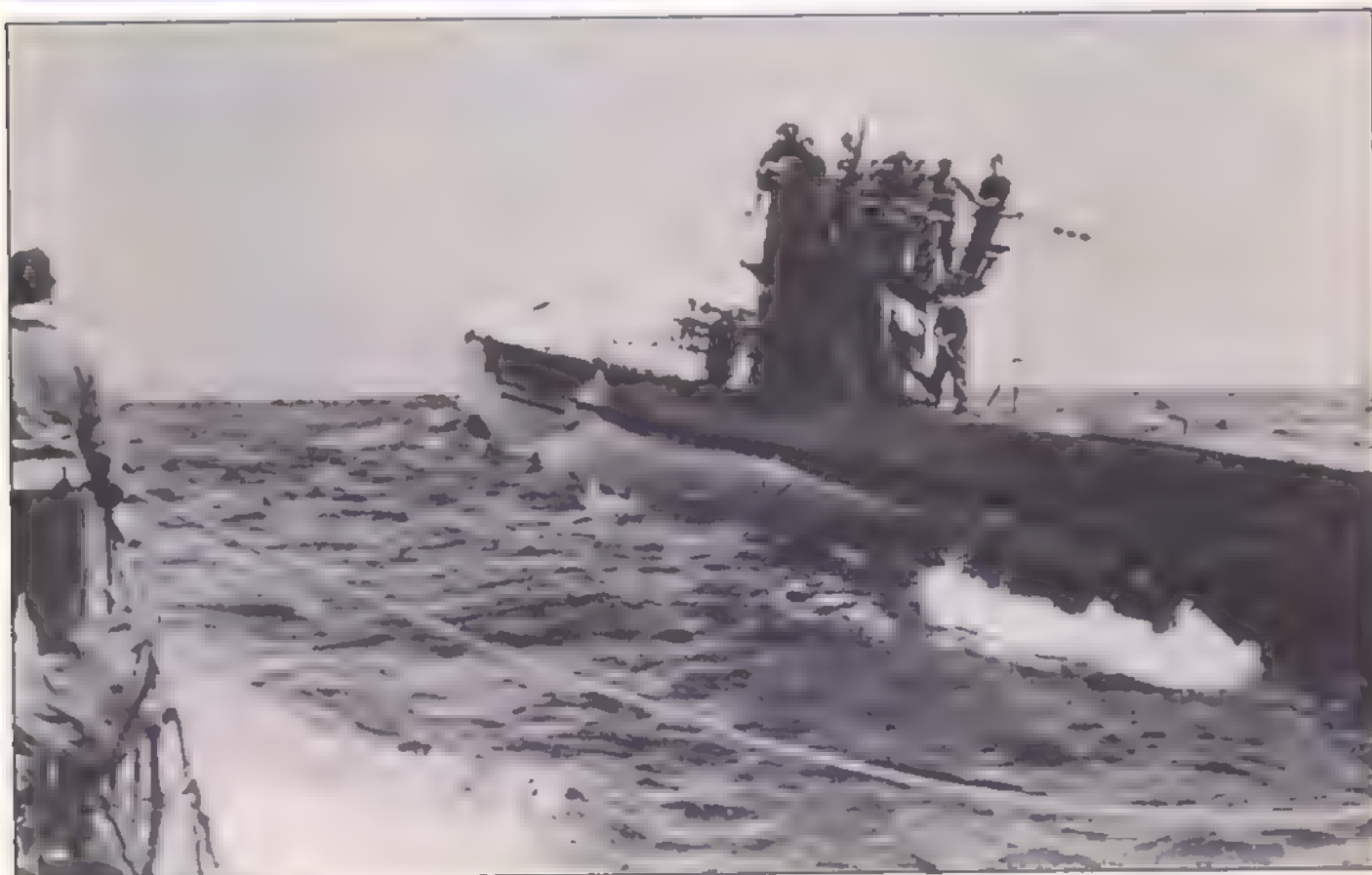
and stern waves was avoidable.

And from its own position low down on the water, surface ships, including the convoy escorts, were visible even on a dark night at a considerable distance, silhouetted against the comparative lightness of the sky above the dark horizon. Ship or airborne radar capable of detecting a surfaced submarine was in its infancy, neither very effective nor widely available. Communications between escorts were primitive, the only radio-telephone was not only unreliable, but, working on high frequency (as opposed to VHF) and having an ocean-wide range, could not be used for plain language messages. Laborious signalling with searchlight was the main form of communication and this, of course, had to come to an end with nightfall. So the advantage at that time was clearly on the side of the U-boats.

The principal problem for the U-boats was the location of a convoy and the concentration of a number of submarines for simultaneous or co-ordinated attack to swamp the weak



Sarson/Bryan



Sado

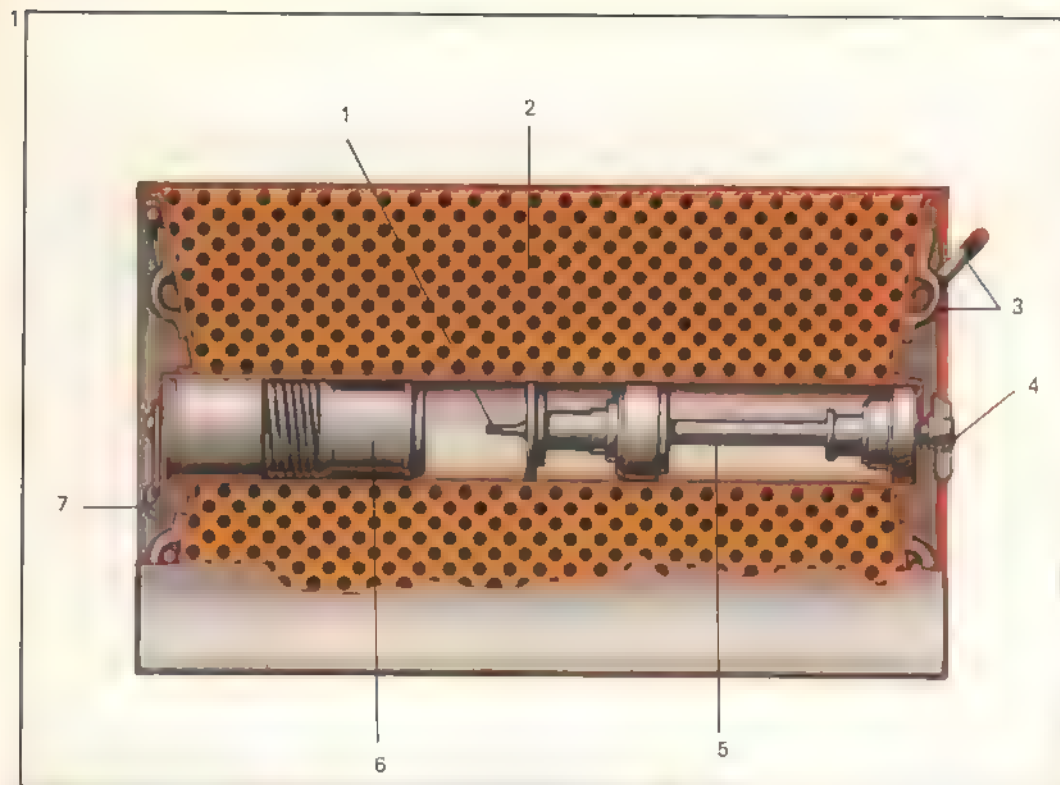
△△ The asdic beam of a U-boat hunter was unable to pick out submarines on the surface; the wave-pattern combined with the small surface-area of the U-boat to break up the signal reflected back. It made certain detection of U-boats impossible.
 △ Rendezvous in the Atlantic Captains Otto Kretschmer and Joachim Shepke commanded U-boats of this type, Mark VII, during their attack on Convoy HX112. Schepke lost his life, Kretschmer spent the rest of the war in a POW camp.

defenses. They were assisted in 1940 by the German ability to de-code the British naval cipher, which gave the routes of individual convoys. A U-boat patrol line would then be established across this route. The first submarine to sight the convoy would radio the fact to headquarters. It would then maintain contact without attacking until others could be directed to the spot by the U-boat command. Once a concentration had been effected, the wolf-pack gathered on the surface ahead of convoys and closed in to the attack after dark. The RAF's Coastal Command was not, at the time, strong enough to prevent it. Moving slowly on the surface, the U-boats were able to pass undetected between the sparse and widely separated escorts. At their leisure, they were able to select their chosen targets from the columns of merchant ships. The most skilful of them, Otto Kretschmer, captain of *U99*, had initiated the practice of

penetrating between the columns of ships to make destruction easier and quicker, and discovery by the escorts more difficult. This was not yet realized by the escorts.

The only thing that had, so far, prevented the severe losses in merchant ships becoming catastrophic was the small numbers of U-boats in service. About 30 of them were operational, which permitted only half a dozen to operate simultaneously. But by the spring of 1941, U-boat-building had gathered momentum. Soon, 100 were in commission and available to Admiral Doenitz, head of the U-boat arm.

Up to then, escorts for convoys had been gathered largely at random from such ships as were available. They had often comprised only two or three old sloops, or *Flower*-class corvettes, turned out in large numbers by minor shipyards. Both types of ship were slow, barely as fast as a surfaced U-boat; they were equipped with asdic and depth-charges.

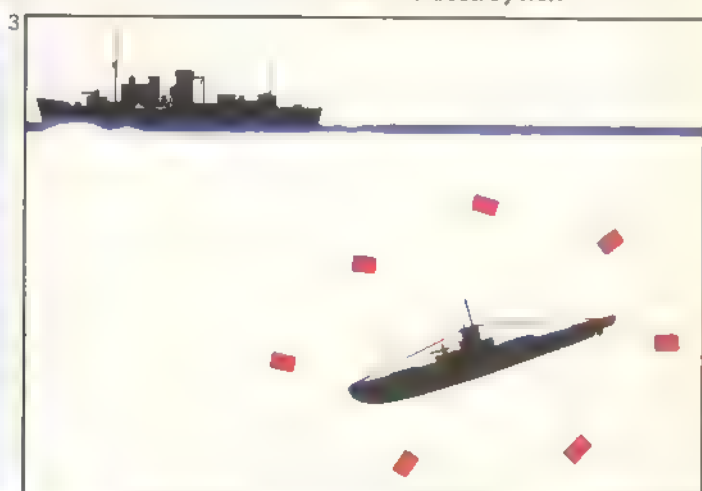
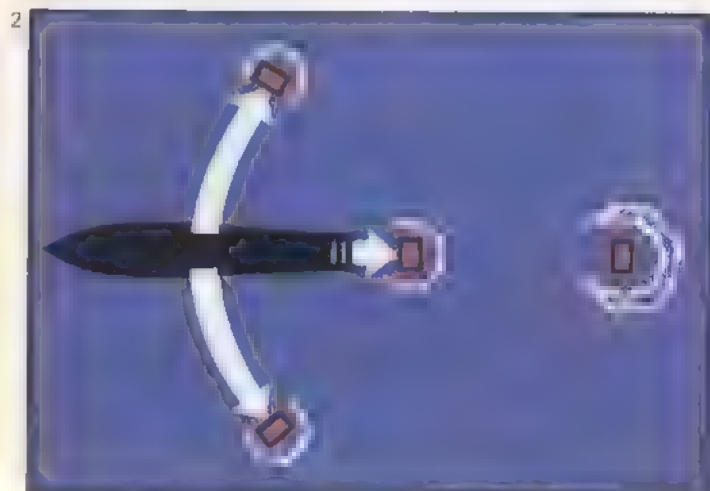


1 Mk. VIII Depth Charge Ejected by Thorneycroft 'Thrower' firing 2lb charge.

- 1 Detonator
- 2 Explosive charge, cordite
- 3 Lifting lugs
- 4 Depth setting key
- 5 Pistol
- 6 Primer and primer placer
- 7 Safety clip

2 A destroyer could throw patterns of depth-charges from the sides as well as dropping them off the stern. This enabled a large area of sea to be covered during an attack upon a submarine. 3 The U-boat hunters' usual plan was to drop depth-charges in such a way that they fell round a diving U-boat. The pressure from all sides when the charges exploded would then tend to crush the submarine's shell and destroy her.

Sanson/Bryan



Sanson/Bryan

Their crews had received brief training, but none with regard to the tactics or methods of their opponents.

Meanwhile a number of the available destroyers had been misused on patrolling the wide ocean wastes or racing hopefully but ineffectually to positions—perhaps 100 miles or more away—where a U-boat or just a periscope had been reported by some imaginative sailor, airman or even lighthouse keepers' daughters. This system, described as 'search and patrol', had been totally discredited during World War I, but the fact had been forgotten.

It was in command of one of these destroyers, the fine, new ship *Hesperus*, that I had spent the winter operating from Liverpool. I had achieved nothing but to improve such expertise as I possessed in coping with the tempestuous weather and mountainous seas of a North Atlantic winter. At the beginning of March 1941, I got back to Liverpool to find orders to transfer to the *Walker*, a veteran of World War I. It was no demotion, however, for with the *Walker* I was to command also one of the new escort groups being formed.

The idea was that such groups were to be kept together,

so that captains could get to know one another and, between operations, train together under the escort commander. On this occasion there was no time, and I had met none of my subordinate captains when I led the 5th Escort Group to sea a few days later. The group was unusually strong, with, besides *Walker*, four other old destroyers, *Vanoc*, *Volunteer*, *Sardonyx* and *Scimitar*, and two corvettes *Bluebell* and *Hydrangea*. At that time, outward-bound convoys were escorted to about 18 degrees west longitude where the ships dispersed to continue their journey independently. The escorts then moved off to intercept a homeward-bound convoy which, until the rendezvous, would have had the meagre defense, against surface raiders only, of an armed merchant cruiser.

No threat developed towards our outward-bound convoy, I had some leisure, therefore, to get to know my officers, if not my ship's company, who were well-trained and competent. I was able to familiarize myself with a new bridge layout before having to go into action, and to discuss possible tactics in the event of an attack. It was as well that I enjoyed

1 *Hydrangea*, one of two corvettes that formed part of the Fifth Escort Group. These small ships took their design from whaling boats. Top speed was only 15 knots, and the crew of 84 suffered considerably in the Atlantic swells.

2 The *MV Erodona*, torpedoed by U110. This tanker burned out, but did not sink and was later towed to Iceland.

3 Another ship of Fifth Escort Group, the destroyer *HMS Scimitar*. She was first to sight U100, captained by the U-boat ace Schepke, and blanketed the area round the U-boat with depth-charges. Vanok rammed and sunk her.

4 World War I veteran destroyer *Walker*. She attacked Otto Kretschmer's U99 and depth-charged the German vessel until she was forced back to the surface. Her captain and crew were picked up by Donald Macintyre, on *Walker*.



Imperial War Museum



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this useful breathing space. For south of Iceland, where we were to meet our valuable homeward-bound convoy HX112, Doenitz's three most successful U-boat commanders were waiting, part of a 'wolf-pack', harrying an outward-bound convoy. They were sure to turn their attentions to us.

These three 'aces', Gunther Prien of *U47*, hero of the exploit in which the battleship *Royal Oak* had been sunk in Scapa Flow, Joachim Schepke, *U100*, and Otto Kretschmer of *U99* were friendly rivals in the race to be first to have accounted for 300,000 tons of Allied shipping. Kretschmer, with 282,000 tons to his credit, had been well in the lead when the three of them sailed from Lorient shortly before.

In comparison with Prien, the ardent Nazi and brilliant but conceited U-boat commander, or with the happy-go-lucky, colorful Schepke, Kretschmer—'Silent Otto' to his brother officers—was a more introvert character who disliked and discounted hero worship and glamor.

But the destructive careers of this trio were about to come to an end. By the time my escort group had met our homeward 10-knot convoy, HX112, of 50 deeply laden

tankers and freighters on the morning of 15 March, Prien had already gone with the entire crew of *U47* to the bottom of the sea. Hanging on to the skirts of a convoy he had located and was shadowing, and taking cover in the frequent rain squalls in the wake of a depression, he had found himself at dusk suddenly exposed to the view of an escorting destroyer, the *Wolverine*, commanded by Jim Rowland. Unable to escape on the surface, he had crash-dived. The sound beam of the asdic had caught him and *U47* was hunted to destruction, the end coming in a tremendous explosion and a vivid red flash from under water.

That day passed quietly for HX112 and its escort. The merchantmen pounded eastwards in a formation of ten columns, half a mile apart, of five ships each. And the escorts, spread in a wide defensive circle round the five-square-mile rectangle which the convoy covered, prowled to and fro on their respective stations. But, as dusk fell over a sea unusually calm for that time of year south of Iceland, the first warning of an enemy threat came over the radio from Whitehall.



Imperial War Museum

△ Vanoc, built 1917 and still fighting fit in 1940 when in action and ramming U100. The photograph was taken in Norway before her aft 4.4in gun turret was removed and the depth-charge equipment was boosted for anti-sub work.
 ◁ Commander J. Denneys, DSO, RN, with his officers and crew of Vanoc on the anniversary of the destroyer being put into service. The ship was broken up in 1945, after the war.



Imperial War Museum

The radio direction-finding stations spread round the British coastline had detected a unit signalling an enemy report to U-boat HQ. We were being shadowed: soon the sea wolves would be converging to form a pack. There was nothing specific to be done other than to make sure everyone was on the alert. The night that closed down was dark and moonless but showing a clear-cut horizon dividing the calm sea and a starlit sky—ideal for a submarine attacking from on the surface.

The sender of the sighting report to U-boat HQ was Lieutenant Commander Lemp, whose U110 had opened the U-boat campaign by torpedoing the passenger liner *Athenia* without warning on the first day of the war. In answer to his call, U100, U99, U74 and U37 took a course which, they calculated, would intercept the convoy. Lemp did not wait for them, however; and during the night of the 15 March he moved in towards the convoy's starboard wing column. He had no difficulty in slipping on the surface between two of the escorts, there being five or six miles between them. But the two bow torpedoes he fired failed to find a target.

As he turned away, Lemp fired another torpedo from his stern tube. The result was horrifying as the petrol-tanker *Erodona* burst into flames, which spread over the water round her. Nearest to her was the corvette *Bluebell* and I ordered her to close and to do what she could. The reply, which came some time later, was that the sea was ablaze with petrol and not a soul could have survived. (Incredibly, the tanker burnt out without sinking and was eventually towed to Iceland.) Meanwhile, expecting further attacks, the remainder of us kept to our screening positions while on every bridge anxious eyes strained to pierce the darkness.

But to our relief and surprise, when daylight at last came there had been no further alarms. Evidently, Lemp had been daunted by the strong escort, ineffectual as it had been, and he made no more attempts on the convoy. We were lucky in that, out of the converging wolf-pack, U74 never managed to find us; while U37, at a depth of 16-metres had (as we learned after the war), got in the path of a large tanker when in a fog-patch and received such damage to her conning tower that she was forced to limp back to base.

Nevertheless we were to be up against two U-boats worth a whole wolf-pack of less deadly raiders. Both made contact during 16 March and shadowed us from the edge of the horizon. Kretschmer kept out of sight, but late in the afternoon the over-confident Schepke came too close and was sighted by the *Scimitar*. Excited at the prospect of something we could 'get our teeth' into, I swept out at high speed with the *Scimitar* and *Vanoc*. At the estimated

position in which the submarine had dived, we began a systematic sonar search. But the U-boat evaded us.

So long as the U-boat was kept down, the convoy was getting away from the danger zone, perhaps far enough to keep it safe for the night from that particular attacker. Leaving the other two escorts to continue the hunt for two hours, I took *Walker* back to rejoin the convoy. I had hardly regained my station on the port bow at 2200 when a hollow boom was felt through the hull and a brilliant eruption of flame on the far side of the convoy marked the first of Kretschmer's victims, another petrol tanker. During the next hour, five more ships were torpedoed, all but one of which went to the bottom, leaving lifeboats and rafts with survivors dotting the surface of the sea.

In the glare of the blazing tankers, *U99* was sighted by ships in the convoy. We did not see the U-boat because it had not yet been appreciated that they were bold enough to penetrate between the convoy columns. With no echo of the sonar beam coming back into the receiver and nothing to be seen on the surface through the darkness, there was little we could do, except to detail the corvettes to act as rescue ships. It was no good firing starshell unless one knew the direction of the object to be illuminated. And even then they were more help to the U-boat than her attacker.

Feeling of frustration

I can remember the feeling of frustration. How could the darkness be penetrated and the attackers destroyed? Our one hope was to sight a U-boat's tell-tale white wake, give chase to force her to dive, and allow the asdics a chance to bring our depth-charges into action. Everything had to be subordinated to that end and so, with binoculars firmly wedged on a steady bearing, I put *Walker* into a gently curving course, thereby putting every point of the compass under a penetrating probe. And it worked.

As *Walker's* bows swung, a thin line of white water came into the lens of my glasses. A thin line which could only be the wake of a ship. There were none of ours in that direction. It *had* to be a U-boat! I shouted orders, increasing speed to 30 knots and altered course towards the target. Suddenly, the U-boat spotted us and crash-dived in a cloud of spray. A swirl of phosphorescent water still lingered as we passed over the area and sent a pattern of ten depth-charges crashing down.

It was not possible to miss. We must have dropped them smack on top of him. The depth charges detonated with great cracking explosions and huge water spouts rose to masthead height astern of us. Two and a half minutes later another explosion followed and an orange flash momentarily spread across the surface. We had every reason to hope that this was our first 'kill'. I had not yet learned how hard to kill a U-boat could be. Our charges had exploded too deep to do fatal damage. The reason for the delayed explosion has never been found. And when our sonar detected the submerged target there began a long duel with the *U100*, in which the *Vanoc* was called to join.

Taking it in turns to run in to the attack, pattern after pattern of depth-charges went down as we tried to get one to within the lethal range—about 20ft—of our target. But Schepke was a wily opponent and, dodging and twisting in the depths, he managed to escape destruction, though heavily damaged.

Soon the waters became so disturbed by the repeated explosions, each one of which sent back an echo to the

asdic's sound beam, that we could no longer distinguish our target from the other echoes and a lull in the fight was forced upon us.

I had for some time past noticed in the distance the bobbing lights on the lifeboats from one of our sunken ships, but with an enemy to engage there was nothing for it but to harden my heart and hope that the time might come later when I could rescue the crews. This lull seemed a good opportunity and perhaps if we left the area temporarily the U-boat commander might think he had shaken us off and be tempted into some indiscretion. So, the *Vanoc* steaming round us in protection, we stopped and picked up the master and 37 of the crew of the *J. B. White*.

This completed, the time was ripe to head quietly back to where the U-boat had last been located and perhaps catch him licking his wounds on the surface.

We had hardly got under way when I noticed that *Vanoc* was drawing ahead fast and thought perhaps she had misread our signal ordering the speed to be maintained. As I ordered a signal to be made to her, Yeoman of Signals Gerrard said: 'She's signalling to us, sir, but I can't read it as her light is flickering so badly'. I realized that *Vanoc* must be going ahead at her full speed. Like *Walker*, she was a veteran ship. Her bridge would be shaking and rattling as her 30,000hp drove her forward through the Atlantic swell.

Then the radio-telephone crackled and *Vanoc* came on the air with the laconic signal: 'Have rammed and sunk U-boat'. What a blissful moment that was for us—the successful culmination of a long and arduous fight. Our losses in the convoy had been partly avenged.

No mistake by *Vanoc*

As soon as the *Vanoc* and *Scimitar* had given up the earlier sonar hunt for his boat, Schepke had surfaced and at high speed had been chasing through the night after the convoy to go into the attack. The sound of his rival's torpedoes no doubt made him impatient. It was his wake I had sighted. And Lieutenant Commander Jim Deneys of the *Vanoc* had made no mistake as he rammed *U100* and sent her to the bottom, leaving only a handful of survivors. But Schepke was not among them.

As I had hoped, damage from our repeated attacks had accumulated in the submarine. Crippled, the U-boat had surfaced in the hope of getting away in the darkness. But, detected at a range of about a mile by the *Vanoc's* primitive radar, she had been sighted soon after.

It was in a less despairing mood that I circled the *Vanoc* while she picked up survivors and made good her own damage. Nevertheless, it was at first with considerable doubt that I judged a report from the *Walker's* sonar operator that he was in contact with yet another submarine. But I became convinced and took the *Walker* into the attack. Things then happened fast.

With the maddening habit of the beautiful but temperamental instruments of precision provided for us, they all elected to break down at the crucial moment. It was a great test for *Walker's* sonar team controlled by John Langton, her First Lieutenant. Much patient drill against such an emergency now brought its reward. Timing his attack by the most primitive methods, Langton gave the order to fire. As the charges exploded, we ran on to get sea-room for further attacks; but as we turned there came the thrilling signal from the *Vanoc*: 'U-boat surfaced astern of me'.

The *Vanoc's* searchlight beam stabbed out and settled on the submarine. Both destroyers opened fire—somewhat



Imperial War Museum

△ *Joachim Schepke, of U100, smiling after receiving his Iron Cross. He sunk 230,000 tons of Allied shipping, but was crushed to death in his conning-tower by Vanoc's bows.*

△▷ *Most ruthless and Nazified German submarine captain, Gunther Prien, of U47. He sunk HMS Royal Oak in Scapa Flow and sunk 245,000 tons of shipping. He and his crew were drowned after being depth-charged by HMS Wolverine.*



AP

Watched by the crew of the destroyer that sunk him, 'Smiling Otto' Kretschmer walks ashore into captivity. U-boat U99 was commissioned with him on 18 April 1940. He sunk 282,000 tons of shipping before being captured.

wildly as they rolled in the long ocean swell—and ill-directed by the gunners, who were blinded by the flash of their own weapons. In the *Walker*, the shipwrecked merchant seamen, with an understandable enthusiasm, caused confusion round the guns as they rushed more than enough ammunition from the lockers.

But it did not matter. From the U-boat, a lamp flickered out. We accepted the signal that she was sinking as surrender and ceased fire. And soon the U-boat's crew were in the water swimming towards us as their craft plunged to the bottom. In a little while, having picked them up, we were on our way back to join the convoy. Under the watchful eye of a sentry, Germany's foremost U-boat ace, caught at last, dropped into an exhausted sleep in my cabin.

Kretschmer had been unlucky. His torpedoes expended, he had been circling on the surface astern of the convoy to

shape course for base when he had encountered us. The officer on watch, contrary to Kretschmer's well-tryed tactics of evading on the surface in the darkness, had immediately dived the boat. The sonar beam had picked up the target and U99's fate was sealed.

It was with a certain grim satisfaction that I ordered the Germans on deck as we steamed through the convoy columns the next morning to let them see the splendid array of ocean-going ships in perfect formation as though nothing had happened. Standing on the quarter-deck with the *Walker's* Chief Engineer, George Osborne, Kretschmer commented on the coincidence of our horseshoe crest, similar to that of U99. But he pointed out that on his U-boat the crest had been displayed with the points downwards. 'Well, Captain, in that way you let the luck run out,' said the Chief. It brought a rueful laugh from our prisoner.

With daylight, too, we were able to communicate freely with the *Vanoc* and gather details of the night's events. One of the most significant facts was that, for the first time, radar had been instrumental in a U-boat sinking—an indication of the turning of the tide in the duel between U-boats and escorts. And in that same month, March 1941, the first radar set operating on the short wave of 10 centimetres, increasing the power output of previous sets more than 500 times, was being tested in the corvette *Orchis*. It was to prove to be the most decisive scientific breakthrough of the Atlantic battle, rivalled only in importance by the development of the ship-borne High Frequency Direction Finder which enabled escorts to pinpoint any U-boat transmitting by radio to base. The U-boat was to lose its 'cloak of invisibility' by these two devices, working in support of sonar.

Four for bridge

When it was known ashore that our 'bag' for the night had been Germany's two leading U-boat aces, we were ordered to leave the convoy—now out of danger—and return independently. But we were still two days out from our base and, in the meantime, there was the problem of accommodating our numerous but involuntary guests. There was no space in our little ship to keep them apart. But after a few awkward incidents they settled down, ratings on the mess-decks, officers in the wardroom. Otto Kretschmer was in my after-cabin, isolated at first, but presently joined by the master and chief officer of the *J. B. White*. And there, George Osborne, a devotee of contract bridge, persuaded them to join him in a game—a strange combination and, as Osborne afterwards maintained, the only decent game he managed to get during the war.

On arrival at Liverpool we received a flattering welcome from our Commander-in-Chief, Sir Percy Noble. It was agreed that Doenitz had been struck a powerful blow. In fact, U-boat Command was so shaken by the loss of three 'aces' in one week that they thought we had acquired some secret weapon, which was not yet true.

Doenitz decided to move his U-boats westward beyond the reach of escorts based on the United Kingdom. To counter this move, the Admiralty based escorts and aircraft in Iceland, which kept the convoys under guard as far as 35 degrees west longitude. The battle was to spread in this way farther westwards until the whole Atlantic became the 'battlefield', with convoys escorted by warships and aircraft throughout their crossing. This continued after heavy losses on both sides, until the battle of the Atlantic was finally won by the Allies in 1943.

Donald Macintyre

PORT ARTHUR

As the 20th century began, the last classic fortress fell.
And Japanese Imperialism swept Russia from the East



Fishing vessels sailed from the warm-water harbor of Lushun, a tiny village at the south-west end of the Liaotung Peninsula in Manchuria, before 1900. But in four years Lushun acquired another trade and another name. Warships of the Russian Tsar filled the harbor and thousands of his Imperial troops drilled within the colossal defenses of a classic fortress destined for world-wide notoriety—Port Arthur. Here, in 1904, the armed forces of the Tsar of Russia and those of the Emperor of Japan clashed in a series of long and bloody battles in an encounter that was at once a relic of the past and a portent for the future.

The port falls—for the first time

Conflict around the ice-free port of Lushun was not new. In 1894, the new and vigorously militaristic power of Japan moved into Korea, a country the Japanese had long considered theirs. The war with the decaying empire of China was little trouble to them and among their spoils was Lushun, an ideal naval base from which to control the China Sea.

The Chinese holding Lushun in 1894 were no match for an efficient army; their defenses, an ancient wall around the town, were more token than deterrent. The Japanese Army, modelled on Prussian lines after the Franco-Prussian war of 1870, was a highly trained and well-motivated force. An army under the command of Field-Marshal Oyama disembarked at Pitzuwo on 24 October 1894. It rapidly advanced and carried the intervening villages, arriving outside Lushun on 20 November. During that night the troops moved forward, and at dawn launched an attack, supported by the guns of the Japanese fleet in position outside the harbor. The outer defenses, a scattering of improvised fieldworks, were overrun in the initial assault, the ancient wall was soon overcome, and by mid-afternoon the battle was over. Lushun was in Japanese hands. The result of the attack was in no doubt from the outset, but even the Japanese were astonished at its rapid success. As a result of this, and other disasters, the Chinese government sued for peace.

But the Japanese were not allowed to keep their prize. The terms of the peace treaty gave them Formosa and the Liaotung Peninsula but then the western powers stepped in. They were alarmed at the sudden expansion of Japanese power for it appeared to threaten their trade interests. A joint Note from Russia, Germany and France protested at the occupation of the peninsula. The Japanese realized that they could not defy the objections of the great powers so they gave way, and returned the Liaotung Peninsula to the Chinese.

In 1897 a number of anti-western risings in North China led the western nations to demand security for their property and trade interests. They insisted on port and other facilities from the Chinese, and in the general scramble to gain a foothold, Russia saw a golden opportunity to extend her influence. The Trans-Siberian Railway had recently been completed to Vladivostok, 600 miles away across the Korean Peninsula. But to capitalize on this cross-country link the railway, and Russia, needed access to an ice-free port.

In December 1897, Russian warships visited Lushun and in 1898 a lease was signed by which Russia gained the use of the port and permission to fortify it. This secured, the Chinese were persuaded to allow construction of a railway line to the newly named Port Arthur, linking it with the Trans-Siberian line. Russian pressure soon paid off for when the Boxer Rebellion broke out in 1900 troops were poured

down this route until Manchuria was virtually occupied by the Tsar's army.

The lease signed, the fortification of Port Arthur began. The plans of the fortification were probably drawn up by students of General Todleben, the great engineer and Crimean War veteran. They were based on the classic mid-nineteenth century principles of fortification and Port Arthur was one of the last great fortresses ever to be built.

There is an interesting comparison between fortifications built at Port Arthur and the works built at the same time by the Germans at Tsingtao, in China. Tsingtao was heavily fortified, and the designs were based on the latest available technical advances: retracting gun turrets, armored cupolas, subterranean strongpoints and reinforced concrete. But Port Arthur exhibited a system which was at least 50 years older: masonry forts, open gun batteries, deep ditches, caponiers, lunettes, hornworks and all the other architectural oddities that fortification engineers of the eighteenth century indulged in. Nevertheless, the Russian works were massively built, and had the plans been completed they would have secured the port against any contingency. But they never were. Immense drive, dedication, and vast amounts of money are needed to complete a fortification system in peacetime, when no threat is apparent—and the Tsarist Army was lamentably short of all three.

Geographically, Port Arthur was a natural stronghold. It was surrounded by hills which protected every possible line of attack. To the east of the Old Town the Chinese wall still stood, and beyond this the Eastern Heights were crowned with four major forts—Laoti, Chikuan, Erhlung and Sungssu—interspersed with a number of minor works. On the western side, a range of hills overlooking the New Town carried another four major forts, and two more forts were planned for the small hills running round the end of the harbor to the White Wolf Peninsula.

If all the planned work had been done, and had all the forts been intelligently linked by small works so as to cover all the intervening ground, Port Arthur would have been an impossibly tough stronghold to capture. But the engineers had been more concerned with ensuring that the interior angles of the lunette parapets were text-book precise rather than assessing whether a soldier behind the parapet could command his theoretical field of fire. The Russian Navy had their say also—they objected to expenditure on anything other than coast defense batteries because (so they claimed), their naval might could easily prevent any Japanese landing in Korea or Manchuria.

Half-hearted fortification

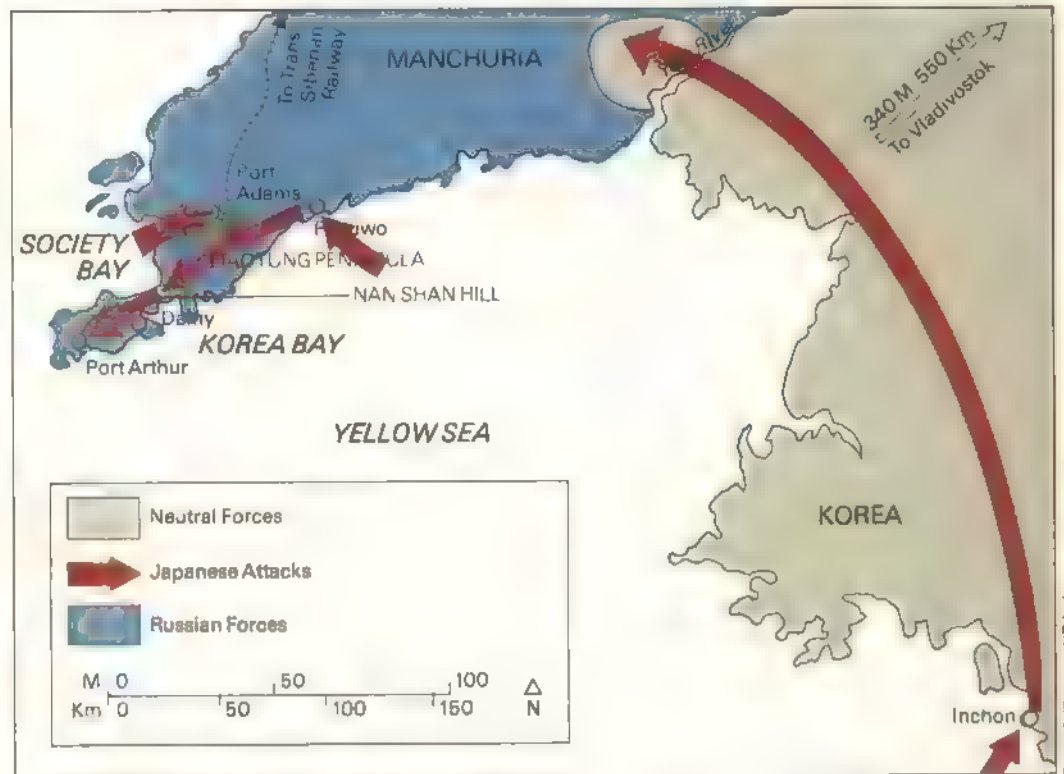
The construction of the fortress was dogged by an intermittent flow of necessary materials, a shortage of labor and finances and a lack of urgency. As a result the line of works was not completed, some works were left unfinished, and linking outposts and revetments, though marked out, were never begun. The greatest error, common in fortress construction, was that the line of defense was too close to the town. The reason for this was that the farther out the line was, the longer it would have to be—and the greater the amount of work and expense involved.

A defense line farther from the town was necessary to provide the desired degree of protection. The planners and engineers faced a common dilemma between cost and effectiveness and they compromised. Port Arthur was to witness a new and deadly consequence of this compromise—it was to be faced with modern rifled artillery with



Novosti

△ Port Arthur in 1904.
 ▷ To take Port Arthur the Japanese had to isolate the fortress from the Russian army in Manchuria. Japanese troops landed at Inchon in Korea in March 1904 and swept north, defeating the Russians at the Yalu river on 1 May. To the south, landings were made at Port Arthur and Pitzuwo and by 6 May the Trans-Siberian railway was severed, cutting off Port Arthur from the rest of the world. Nan Shan Hill and Dalny fell shortly after. Port Arthur was the last objective.
 ◁ (Overleaf) Column upon column of Japanese troops advance on Port Arthur. They repeatedly paid the penalty for this kind of attack against fortified defensive positions and murderous Russian firepower.



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sufficient range to sit outside the defense line and drop shells anywhere within.

When the Japanese fleet appeared off Port Arthur at night, on 8 February 1904, the port was not prepared for war. Japan and Russia were in the throes of negotiation. Japan had demanded the withdrawal of the Russian troops

from Manchuria but the Russians procrastinated. The Japanese, realizing that Russia had no intention of loosening her grip on the area, decided on a lightning attack to immobilize the Russian fleet which was based on Port Arthur. Under cover of darkness the Japanese fleet opened fire on the Russian ships and the port installations, intending



Novosti

General Anatoli Stossel, Russian military commander of the Liaotung peninsula and of Port Arthur. His command was inept and his one major work of fortification, strengthening the Chinese wall around the old town, soon became known to the inhabitants of Port Arthur as 'Stossel's folly'.

to draw the defending fleet into open waters to do battle. The parallel between this assault and the attack on Pearl Harbor in 1941 is unavoidable for the intention in each case was identical—to deliver a surprise attack against a sitting target while diplomatic negotiations lulled the enemy.

When hostilities started, the Russians looked to their defenses—and paradoxically sowed the seeds of their own defeat. General Khvostov, the fortress commander, was responsible for the defenses and, on the outbreak of war Lieutenant-General Smirnov was posted from Warsaw to take command of the port. Until his arrival, General Stossel, the senior officer and military commander of the Liaotung

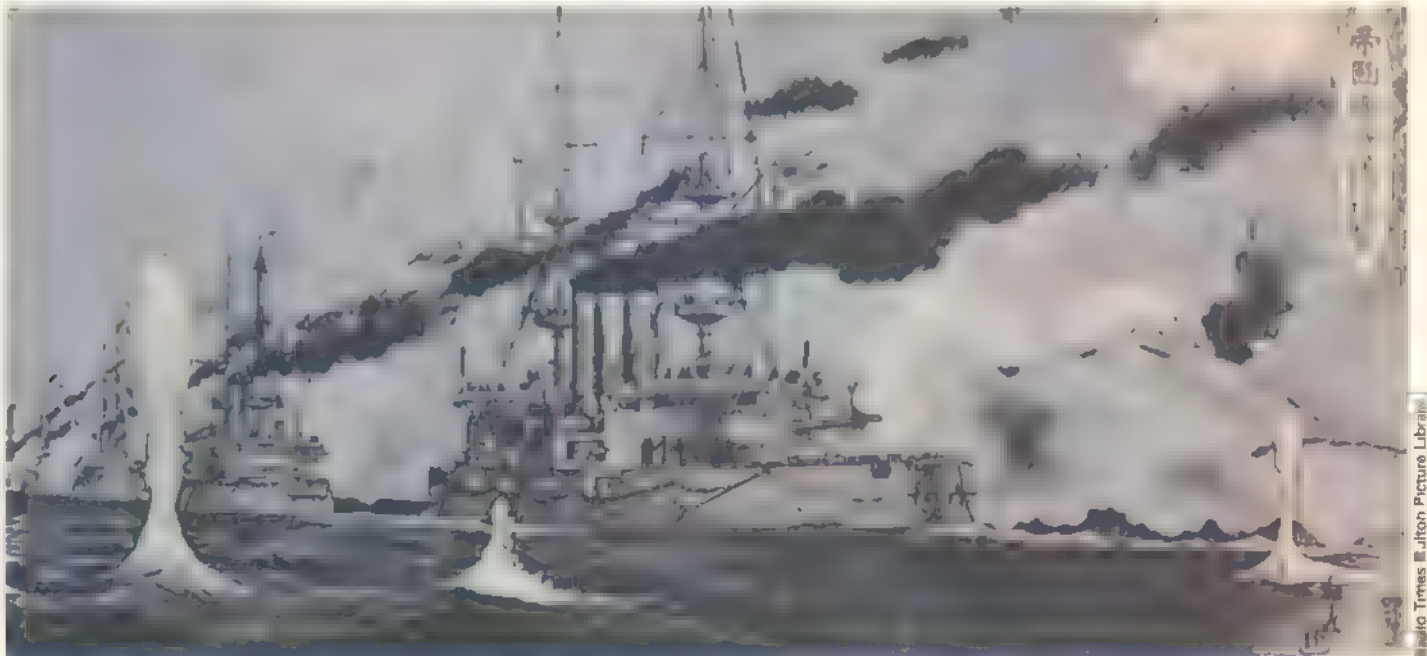
Peninsula assumed command. Gen. Stossel, a strict disciplinarian, was an overrated soldier with a pronounced inability to delegate responsibility. Instead of extending the defensive line and completing the fortifications on 203 Metre Hill and 174 Metre Hill, in the North-western Hills, Stossel ordered the building of what soon came to be called 'Stossel's Folly'—a rampart and ditch around the Old Town reinforcing the Chinese wall.

Two objectives had to be achieved for the Japanese to take Port Arthur. First, the Russian Fleet had to be immobilized to prevent interference with Japanese troop transports; and secondly, the peninsula had to be cut off from the rest of the mainland to prevent the Russian army in Manchuria going to the relief of the besieged garrison. The first objective was never fully realized—but a series of attacks sapped the morale of the Russian sailors. The opening of the assault on Port Arthur, a night bombardment, severely damaged three warships. The following day more damage was wrought on the Russian fleet and, in late February, a night attack by destroyers and blockships caused further losses. After these attacks the Japanese played a waiting game—their blockade of Port Arthur and their readiness to strike any ship that ventured out of the harbor ended any effective role of the Tsar's fleet.

The second necessary objective, to isolate the peninsula and tie up Russian forces in Manchuria, was to be achieved by landing troops in Korea, mainly at Inchon. From there the Japanese planned to move north, against the Russians.

The Russian plan of campaign, formulated by the officer commanding the army in the field, General Kuropatkin, was to leave Port Arthur to fend for itself, trusting that the fortress would hold. The army in Manchuria would be slowly withdrawn before the advancing Japanese until reinforcements could be sent along the Trans-Siberian railway. When the build-up was complete the Russians would advance against the Japanese and sweep them from the mainland. This sound strategy was overruled however—Kuropatkin was subordinate to the Viceroy Alexieff, the Commander-in-Chief, who insisted that the Russians split

Japanese warships bombard Port Arthur. The battle began when the Japanese Navy launched a surprise attack on Russian ships at anchor. The two empires were in diplomatic negotiations at the time and so the assault was an early Pearl Harbor.



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their forces by sending a relief column to Port Arthur.

The Japanese moves against the Russians in Manchuria went according to plan. Japanese forces crossed the Yalu River into Manchuria on 1 May, 1904. The Russians suffered a severe defeat at the Yalu—the first result of the duality of command within the Russian forces. General Sassulitch, commander of the Russian troops on the Yalu, was ordered by Kuropatkin to delay the enemy as much as possible but to avoid a pitched battle and retreat if pressed by superior numbers. But Viceroy Alexieff ordered Sassulitch to hold his positions—the result was defeat.

Three days later the Japanese Second Army landed at Pitzuwo, and shortly afterwards another force landed at Port Arthur, on the other side of the peninsula. By 6 May the railway line linking Port Arthur with the rest of the world was severed and the peninsula was blocked off by the Japanese. On 26 May they began their move down towards Port Arthur. The principal obstacle to their advance was Nan Shan Hill, a 400ft rise at the narrowest point of the peninsula; here less than two miles separated the Bay of Korea from Society Bay, and with any sort of organized defense Nan Shan could be virtually impassable. The hill was strongly defended—about 20,000 men were supposedly available, and excellent fortifications had been prepared.

The Japanese assault on Nan Shan was ferocious, and against such an attack half-hearted measures were fatal. Less than half the available Russian troops were actually committed to battle, the Japanese artillery outclassed the Russian, and a combination of flank attacks through the low tide with a massive frontal attack carried Nan Shan in a matter of hours. The golden opportunity had been lost to the Russians, and with Nan Shan in Japanese hands and the commercial port of Dainy also taken with little endeavor, there was no obstacle to the Japanese advance.

Gen. Nogi moved slowly; his army was not yet up to strength, and the retreating Russians had the advantage of falling back on prepared positions. He was in no great haste though for he could afford to shepherd the Russians into their fortifications. He had a formidable card up his sleeves. Three transports with reinforcements and, more important, three siege batteries of 28cm howitzers were en route from

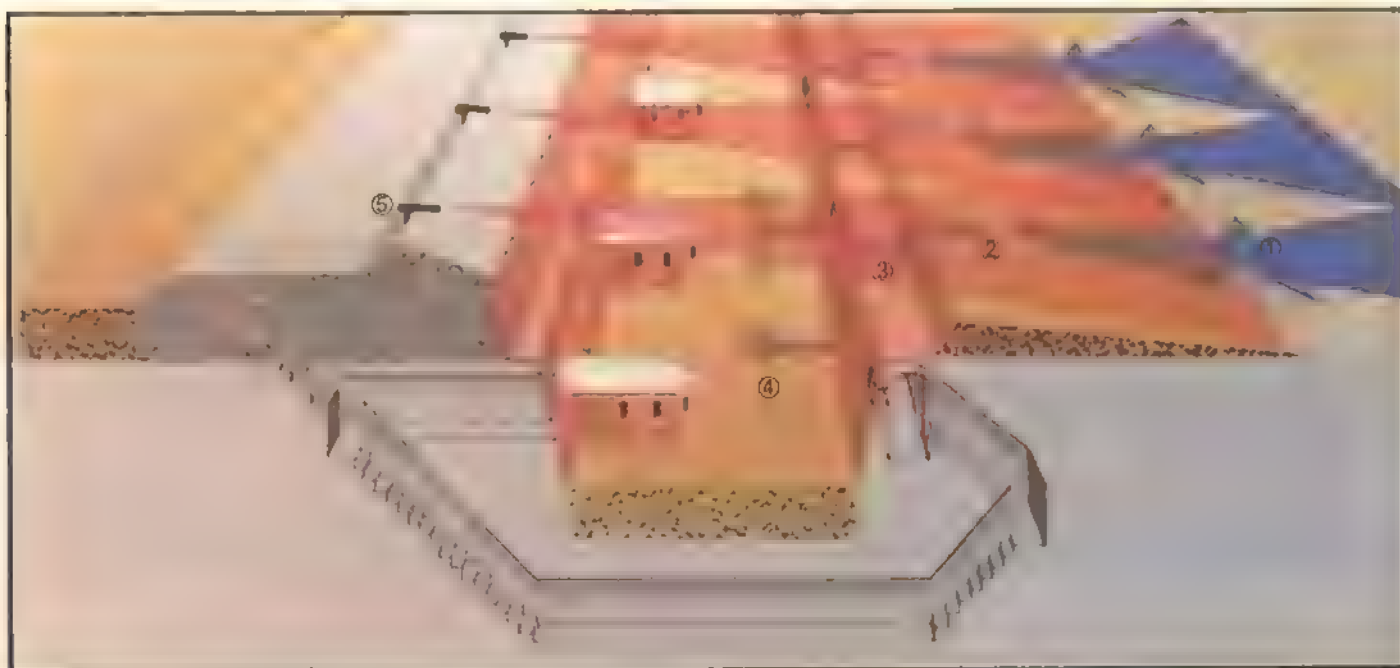
Japan. The howitzers were actually coast defense guns that had been removed from their emplacements and fitted with siege platforms and mountings so that they could be used as field weapons. These were the largest guns ever seen on any battlefield to that date and with 18 of them flinging 700lb shells to pulverize and demoralize the defenders, Nogi's augmented army would then go into the attack.

That was the intention. But it was frustrated. By one of the few strokes of luck the Russians enjoyed, the Vladivostok squadron of the Russian Navy, on a rare offensive foray, met the transports and sank the two carrying the howitzers. This unexpected loss upset Nogi's plans and although orders were immediately given for the conversion of another 12 howitzers Nogi, in the meantime, was going to have to rely on his field artillery and infantry.

The Russians had by now fallen back to the Green Hills Line, a position some 12 miles from Port Arthur. Towards the end of June Nogi's troops were arrayed facing this line. On 25 June, the Japanese artillery opened an intense bombardment on everything they could see—careless Russian concealment meant they could see quite a lot. While the infantry attack went forward, concentrating first on the Russian center and then, as weaknesses showed up, on the right flank, the Japanese Navy added an unusual

This diagram illustrates the suicidal nature of a massed infantry attack against classic fortifications. The Japanese repeatedly launched such attacks against the Port Arthur defenses. The progress of the attack:

(1) A massive infantry attack sets out and reaches the glacis (2) where it is exposed to withering fire. If the attackers reach the top of the glacis they come under fire from the parapet and from the lines of caponiers in the ditch (3). If they get farther and into the ditch they are exposed to cross and enfilading fire from the caponiers and from the counterscarp gallery (4). All during the attack these guns (5) have a high clear shot over the advancing enemy on the glacis which is designed to be difficult to climb and to offer no protective cover. The fire from these guns sweeps the whole ground and overlaps.



feature by positioning ships on both sides of the peninsula to shell the Russian flanks.

Although the Russians had decided to fight on this line the number of troops they deployed was far from adequate—one hill, a key position, was held by no more than a single company, and in spite of its obvious importance neither Stossel nor Fock, commanding the division, were willing to relinquish any of the reserve troops in their control to reinforce the front. Before the day was out, the shredded company was driven from its position, the hill was in Japanese hands, and the defensive line had been pierced in several places.

The strength of the Russian line tested, Nogi now sat tight and waited for almost a month before resuming the attack. The time was spent in tidying up the port of Dalny, disembarking more troops and ammunition, bringing them into position and generally getting organized for a major

attack. The Russians made no attempt to counter-attack in force during this lull. Then, on 26 July, Nogi attacked the Russian left, aiming to take the Ho-Shan feature and then expand to pinch-out Taku-Shan, thereby driving a wedge between the Russians and the sea. By outflanking the Russians, the whole line would collapse.

The attack was a nightmare. The hill was so steep that it was as much as a man could do to climb it let alone fight while he was climbing. And to add to the difficulty torrential rain hammered down on both attackers and defenders. The first attack petered out in this rainstorm, to be resumed the following day. After bitter hand-to-hand fighting the wedge was successfully driven and the Ho-Shan feature was in Japanese hands.

A 12-hour bombardment on 7 August signalled a renewed Japanese assault, this time against Taku-Shan. The infantry assault was to begin at 1900, but then the rain came again

One of Japan's mighty 28cm howitzers at Port Arthur. Nicknamed 'Osaka Babies', they were coast defense guns modified for field use. Capable of firing 700lb shells, they were the largest guns ever seen on any battlefield to that date.

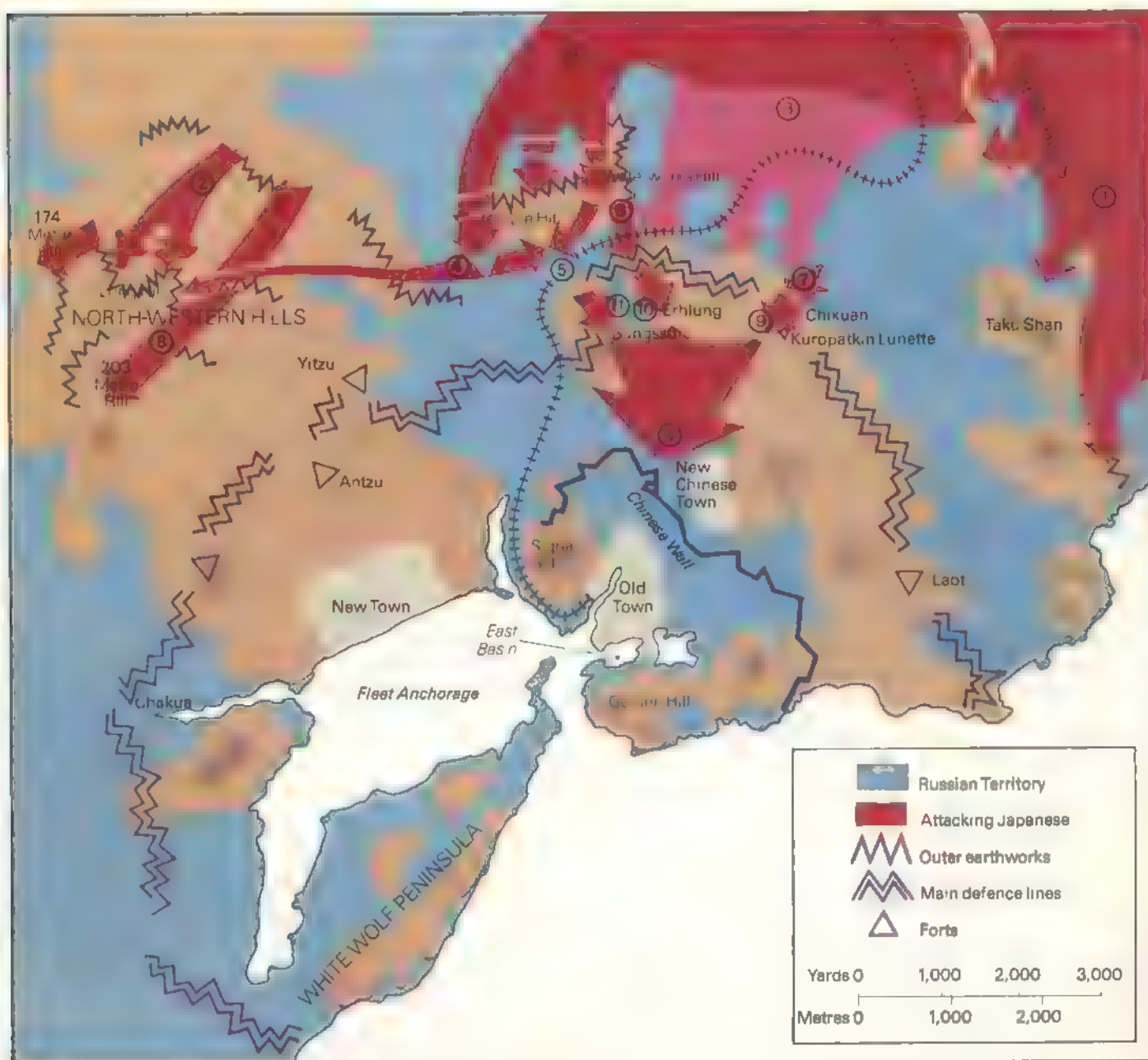


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A BRIEF CHRONOLOGY OF THE BATTLE FOR PORT ARTHUR (see map):

- 1 Japanese breach the Green Hills Line, Port Arthur's main defense line, 9 August 1904.
- 2 Abortive attack on North-western Hills, 14 August.
- 3 Attack on Erhlung and Chikuan with feint attack on 203 Metre Hill, 21 August. Attack fails but 174 Metre Hill is captured by the Japanese.
- 4 Japanese assault on the North-eastern defenses at Temple Hill and Waterworks Hill in front of Erhlung, 19 September. Attack succeeds and Port Arthur's main water supply is cut. Fresh assault on 203 Metre Hill fails, the Japanese only gaining a foothold on Long Hill.
- 5, 6 Erhlung and Chikuan forts attacked, the assault being broadened to deal with the flanking works of Sungssu and the Kuropatkin Lunette. Mine fired at Sungssu giving Japanese possession of the ditch, 17

- November. Mine blown at Erhlung, 20 November.
- 7 Attack on Chikuan fails, 17 November. After intense artillery bombardment attack resumed, 26 November. Japanese repulsed with 12,000 casualties.
- 8 Attack on 203 Metre Hill repulsed, 28 November. Hill falls after artillery bombardment and intermittent assaults, 5 December.
- 9 Mines fired beneath ramparts of Chikuan. The fort taken by the Japanese, 18 December.
- 10 Erhlung falls after mines breach the defenses, 28 December.
- 11 Mines fired at Sungssu, 31 December. The fort's magazine explodes and Japanese gain easy victory.
- 12 At 2045 Russians surrender Port Arthur, to the Japanese, 2 January.



and lashed down with such intensity that although the Japanese troops moved on time, they could do no more than make a token advance before being halted by the weather. Next day the Russian Navy appeared, and shelled the Japanese on the slopes of the hill, but they were driven off by field artillery fire. Then, again at 1900, the assault began afresh; it was another hard and bloody hand-to-hand affair with bayonet and grenade, but within an hour the position was won. Without waiting to consolidate, the assault rolled on and by dawn the next day Siagu-Shan, the next feature in the line, had also fallen. The Green Hills Line was broken, and the rest of the defenders, as Nogi had predicted, abandoned their positions and fell back in disorder to Port Arthur's main defensive line.

The Russians were also faring badly in the north. The relief force under General Shtakelberg, dispatched on Viceroy Alexieff's orders against Kuropatkin's better judgement, had come to an untimely end in mid-June at the battle of Telissu. The defenders of Port Arthur now had no hope of relief and the Japanese no fear of interruption. The only two exterior factors entering into the equation were imponderables—when Russian reinforcements would arrive to swell the strength of the Manchurian Army, and when the Russian fleet would reach eastern waters from the Baltic to upset the balance of naval forces.

On 7 August the Japanese batteries began pitching shells into the town, firing 'off the map' with no more specific intention than to make life miserable for the defenders. They were quite successful in this. Then, on 14 August, a night attack against the North-western Hills was launched, and here the Japanese came up against a novelty which was making its first large-scale appearance in warfare—barbed wire entanglements. This obstacle held up the advance and positioned the attackers at effective machine-gun range, and the Russians made the most of the opportunity. Dawn found the entanglements covered in piles of bodies and, the lesson having been learned, the attacks stopped to allow artillery to bombard the defenses.

General Nogi halted activities on 16 August in order to send in the customary request for surrender. Stossel, enraged by this insolence, peremptorily rejected such overtures. So, after a two-day respite the attack began in earnest with a three-day bombardment from Nogi's 380 assorted guns and howitzers. (The 12 28cm howitzers had by now been prepared and were being made ready for shipment, along with a number of 15cm guns, but Nogi was hopeful that he could do the job without waiting for these.) Late in the afternoon of 21 August he launched a massive attack, one division making a feint towards 203 Metre Hill while two divisions made the main thrust at the north-eastern corner of the defenses. The forts of Erhlung and Chikuan were their objectives.

Slaughter at Erhlung and Chikuan

It was a mistake. The two forts were well built and well sited, less than 1,200 yards apart, were mutually supporting and covered every inch of the ground about them with fire. As a result the main attack was thrown back and the attackers were mown down in their hundreds. The feint attack, directed against fieldworks was successful in that 174 Metre Hill, an outlying defense, was taken. Nogi persisted in his action, feeling, as many commanders have felt before and since, that one more effort might well carry the day. By the morning of 26 August though, it was clear that such an attack would not succeed and the Japanese dug in

to what little they had gained and rested. The furious engagement had cost Nogi over 15,000 casualties—a sorry price to pay for the few lines of trench captured, and showed that martial order was not enough against a properly designed fort, even if uncompleted or ineptly commanded. Nogi now realized that he could not take Port Arthur by main force and that he would now have to rely on the classic method for taking classic fortifications.

How to take a classic fortress

The classic method for attacking a fortress was conceived by Sebastien le Prestre de Vauban, the great French engineer of the seventeenth century. The 'sap and parallel' method he perfected enabled any fortress to be taken. The process is simple though long and arduous—once a basic line, at a safe distance from the fortress, is established, 'saps', or trenches, are dug forward towards the fortress for a safe distance. Then another trench, a 'parallel' (it is literally parallel to the face of the fortress) is dug to connect the ends of the saps, or 'sap heads'. Bays for artillery and infantry are made in the parallel to provide covering fire while a new set of saps and a new parallel are made reaching closer to the fortress. The process continues until the last saps breach the glacis (the bank sloping downwards from a fort where attackers are exposed to fire) and the ditch of the fort. The rampart is then breached, either by firing a mine underneath or by artillery fire, and troops pour from the saps to storm the breach.

The defenders, of course, are not idle while this is in progress. Defending guns batter the saps and parallels, and trenches are dug to intercept the mine tunnels of the besiegers, or mines are placed beneath the approaching saps. Assault parties leave the fortress to bomb the saps. This method of attack involves furious warfare—it was this type of conflict that now raged around Port Arthur.

The Japanese spent much of September assembling the stores needed for the siege, bringing in reinforcements, laying telephone lines and building a narrow-gauge railway to speed the flow of ammunition and supplies. The long-awaited 28cm howitzers arrived too and were dragged into place by teams of coolies. But despite all this Nogi still believed that if he could drive a wedge into the defenses the whole line would collapse as the Green Hills Line had done.

With this objective, Nogi launched a further attack on the North-western Hills, with 203 Metre Hill as the prime target, on 19 September. At 0700 a heavy bombardment began, directed at the hills in front of Erhlung, known as Temple Hill and Waterworks Hill, on the outer line of the defenses. Some of the barbed wire there had been cut by a night patrol and by a stroke of fortune they had also discovered and cut the wires leading to a number of defensive mines. At 1600 the bombardment intensified and three hours later the Japanese attack was launched. It was repulsed by concentrated small-arms fire. Another assault, at night, gained some ground but after hand-to-hand fighting the Japanese were thrown back. Dawn saw a fresh assault which finally dislodged the defenders and by midday on 20 September the area was in Japanese hands. It contained Port Arthur's water supply—which the Japanese cut.

This sector secure, Nogi returned to the assault of 203 Metre Hill. After a day's bombardment by all the Japanese artillery the infantry attack was launched. But to reach the defenders the Japanese had to cross a 300-yard stretch of open ground and they were subjected to a murderous hail

of small-arm fire and shrapnel when they attempted this. Despite the carnage, the attackers pressed on, using the bodies of their fallen comrades as cover. The battle raged all night and when dawn lightened the skies the defenders were still in place while the attackers had done no more than scratch a trench at the bottom of the hill. Here the attackers had to tolerate a further trial—the Russians rolled canisters of explosive down the hill fused to detonate when they reached the trench.

The attack had gained little—merely a foothold on Long Hill, north of 203 Metre Hill, of little advantage. But with over 4,000 casualties, Nogi was again shown the futility of headlong assault, and he now decided to wait for results from his sappers and miners, who had begun to drive tunnels and saps towards most of the permanent works. Meanwhile, on 1 October, the 28cm howitzers opened fire, searching the length of the north-eastern front. Shells

landed in the Erhlung and Chikuan Forts doing immense damage.

By 26 October the parallels were close under Erhlung Fort and Chikuan Fort, and Nogi made a final attempt at a direct assault. After a four-day bombardment a mine was fired beneath Erhlung at dawn on 30 October. This signalled an intensification of the bombardment—so heavy was it that by midmorning the hill and fort had virtually vanished under a cloud of smoke and dust. In the afternoon, when the slopes around the fort were a pockmarked and reeking moonscape, the Japanese assaults began. But once again, they merely demonstrated the proofs of the fortress engineers' theories. A massed attack up the glacis of Chikuan was cut to ribbons by rifle, machine-gun and shrapnel fire—the exposed slope of the glacis became the very killing-ground it was designed to be.

A thousand men and a huge amount of ammunition later

With reckless bravery the troops of Imperial Japan storm a Russian fortification. The casualties on both sides were colossal—57,780 Japanese and 31,306 Russians were killed or wounded in the ten-month battle for the fortress.



Nogi was finally convinced of the futility of direct assault against scientifically designed works. His attempt to attack two specific forts was doomed to failure for he made no effort to neutralize the flanking works, which left them free to enfilade his every move. But although Nogi was now content to wait until his saps and parallels were closed up the Japanese Navy were not. Though they had performed well against the Russian Navy they did not intend to make the mistake of under-rating the enemy, and the Russian Second Pacific Squadron, now en route from the Baltic, was an unknown quantity. It, together with the warships in Port Arthur and the Vladivostok Squadron, could prove a formidable force, so the Navy pressed the Army to get their heavy guns into a position that would allow their heavy guns to fire on the fleet in Port Arthur harbor and remove them from the reckoning.

Nogi knew the cost only too well but he agreed to make the effort, and gave orders for another attack on Erhlung and Chikuan Forts. This time, however, he broadened his attack to deal with the flanking works, Sungssu Fort and Kuropatkin Lunette. On 17 November a mine at Sungssu was fired, blowing in the counterscarp gallery and giving the Japanese possession of the ditch, while on 20 November a mine at Erhlung was blown, also filling the ditch with debris.

The savagery of Middle Ages warfare

On 17 November the Japanese moved forces against Chikuan, but the attack was repulsed after a night of hand-to-hand fighting in which trenches changed hands three and four times. Days of artillery bombardment followed and the attack was resumed on 26 November. It was a savage encounter sometimes akin to Middle Age warfare—grenades, explosive charges, burning oil and firebrands were hurled at the attackers. In places the Japanese entered the works, but the interiors had been traversed with sandbag walls to form a species of lethal maze in which the attackers were channelled like sheep to be mown down by machine-guns and case shot. The battle raged all night but eventually the Japanese, with 12,000 casualties, fell back with nothing gained.

Nogi now turned to his alternative plan, and with little delay an attack on 203 Metre Hill was prepared. An intense bombardment not only prepared the ground but alerted the defenders and allowed them time to assemble ample reserves. The assault began at last light on 27 November, but the Russian reserves proved decisive, and the Japanese were beaten off. Thereafter the battle resolved itself into an eight-day affair of bombardment interspersed with assaults, resulting, on 5 December, in a Japanese victory. So nightmarish had been the battle that on one hill only three defenders survived.

On the following day an observation post was set up, and on the morning of 7 December the 28cm howitzers opened up on the Russian fleet. The aim of the Japanese gunners was dreadful—280 shells were fired but only 36 hit their targets. But the object was achieved; five battleships were sunk, one scuttled and one tried to make a run for it and was torpedoed outside the harbor. The fleet dealt with to the satisfaction of Admiral Togo, the howitzers turned on the town. By this time the tunnellers were ready to spring more mines under the Erhlung and Chikuan Forts. Tunnels had been driven beneath the ditches and long mine galleries excavated beneath the ramparts, and on 18 December the Chikuan mines were fired. Due to faulty work they were less

effective than they might have been, but a large section of rampart was blown into the ditch and the assaulting parties poured from their saps. After eight hours of hand-to-hand fighting, the fort, or what was left of it, was in Japanese hands at last.

The mine at Erhlung was fired on 28 December, this time with maximum effectiveness. Not only was the breach made, but by sheer chance many of the defending force were being paraded above the mine galleries when the detonation took place. The majority were killed instantly by the blast, and the remainder so shaken as to be unable to offer any resistance to the assault which followed. The breach only gave access to the lower levels of the fort, however, and the defenders of the upper level were in a commanding position—what followed was a highly lethal game of hide and seek as the Japanese attempted to winkle the Russians out of their positions while the Russians, on familiar ground, made the most of the tortuous passages of the fort to ambush and trap the attackers. Seventeen hours passed before the fort was in Japanese hands.

The final work on the North-eastern Line to be dealt with was Sungssu, which was also mined beneath the ramparts. Again fortune played into the Japanese hands, since the detonation of the mine spread to the fort magazine, so that instead of the rampart being breached the entire work was reduced to a heap of rubble with the defenders underneath. What began as an attack finished as a rescue operation as the Japanese dug out the defenders and led them away to captivity. Sungssu was virtually a bloodless victory.

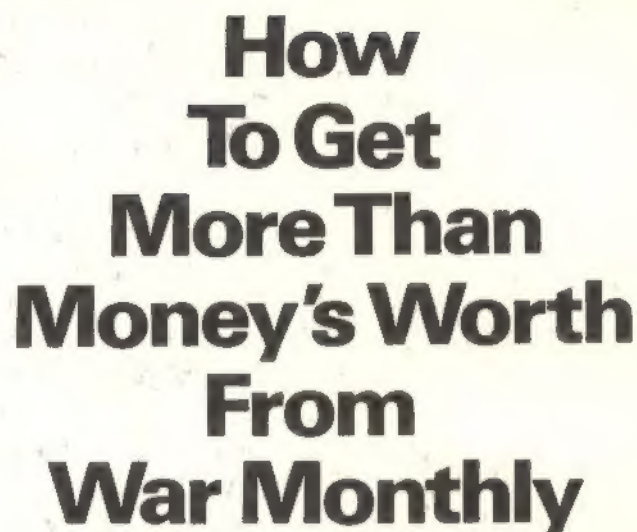
A curious Council of War now took place inside Port Arthur. The artillery commander reported ample stocks of ammunition; the Chief of Staff reported reasonable stocks of food; the Naval commanders joined with them in advocating a continued defense. This the meeting agreed on and the Council broke up. What the members did not know was that Stossel had already telegraphed to Moscow that the fortress could not hold out for more than a few days. Three days later, on New Year's Day 1905, Stossel, without consulting any of his staff, sent an offer of surrender to General Nogi. An hour or two later the news was communicated to the remainder of the staff, with the intimation that they had about a day in which to do whatever they thought necessary in the circumstances. The Naval staff immediately began scuttling what ships remained, while the Army set to work to spike as many guns as possible and destroy as much of their ammunition and stores as they could.

The cost of victory—and defeat

At 2054 on 2 January the surrender was signed and the siege was at an end. The fortress cost the Japanese 57,780, the Russian defenders had lost 31,306 killed and wounded out of a strength of about 42,000.

The Siege of Port Arthur was a relic—and a portent. It was a relic because it was the last great siege conducted on the lines hallowed by time—sap, parallel and mine—against features equally archaic—ditches, caponiers, counterscarps, redoubts. It was a portent because it introduced much of the material which was to become commonplace 10 years later—barbed wire, hand grenades, machine-guns, drab uniforms, and the use of super-heavy artillery. But the one great lesson which stands out of the confused and bloody story is the one which Gen. Nogi, an otherwise astute man, took so long to learn—that field maneuvers are not the way to capture a fortress.

Ian Hogg



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